

**Zvu®** Guide

High Resolution Esophageal  
Manometry Analysis

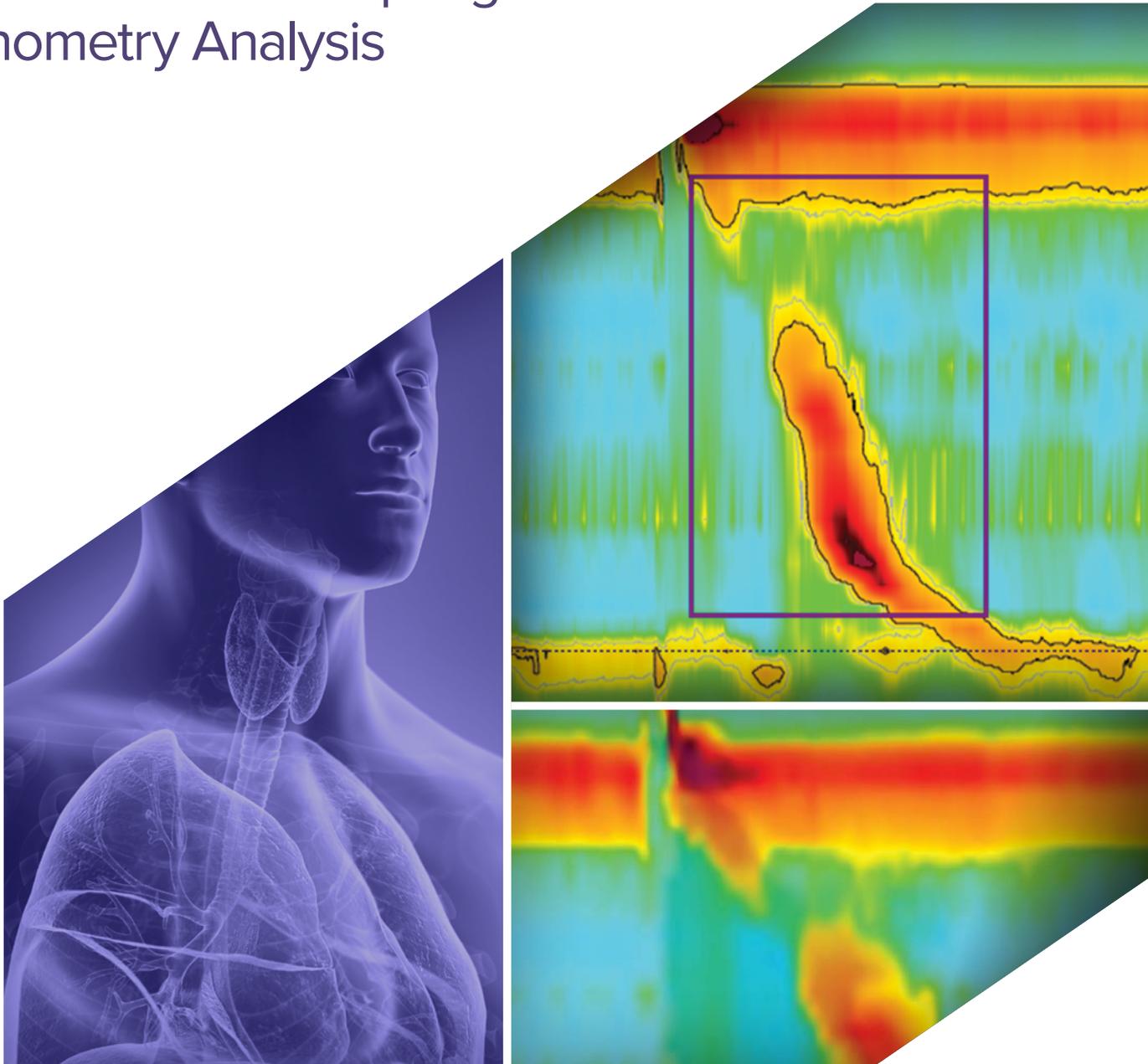
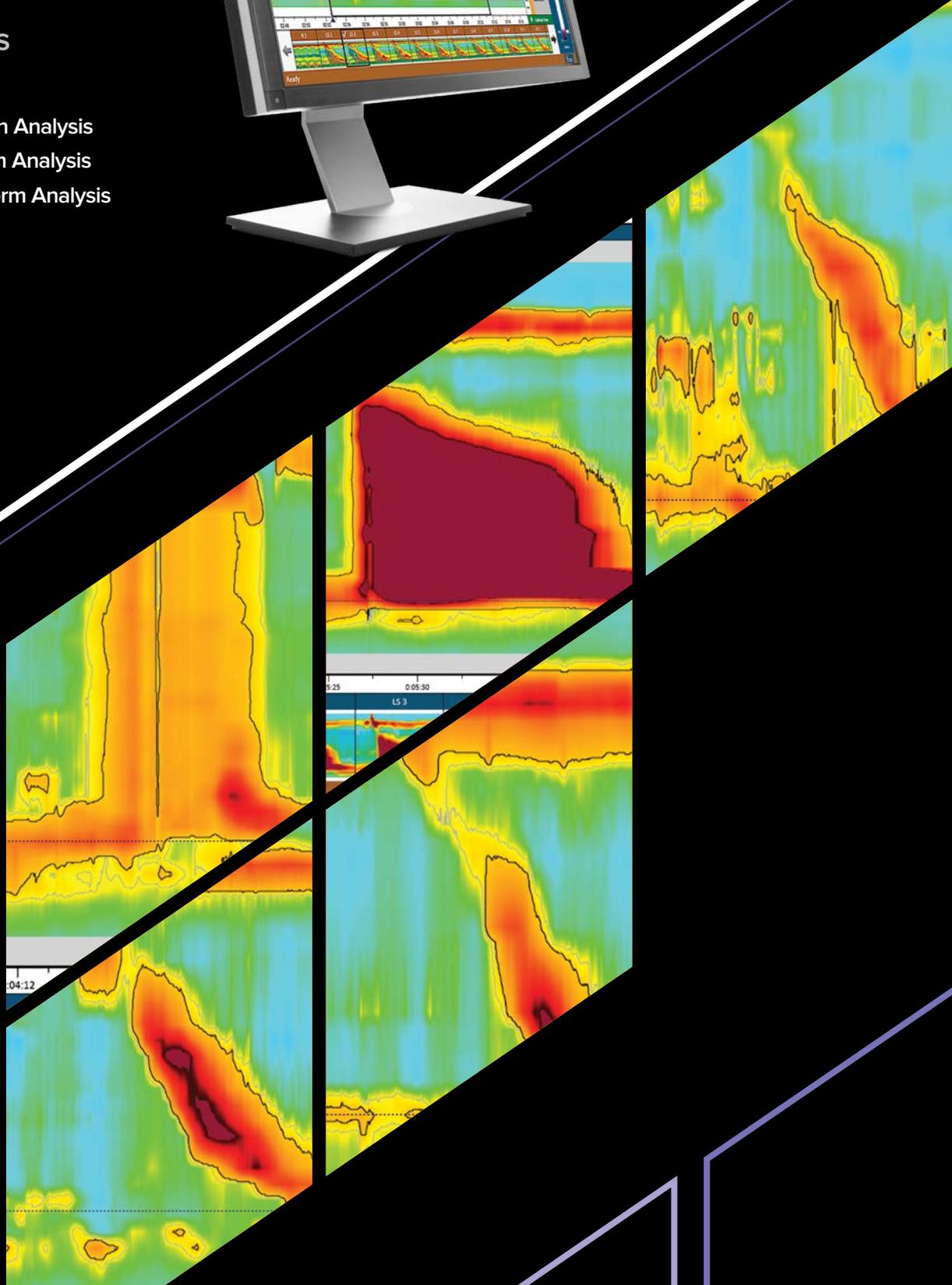
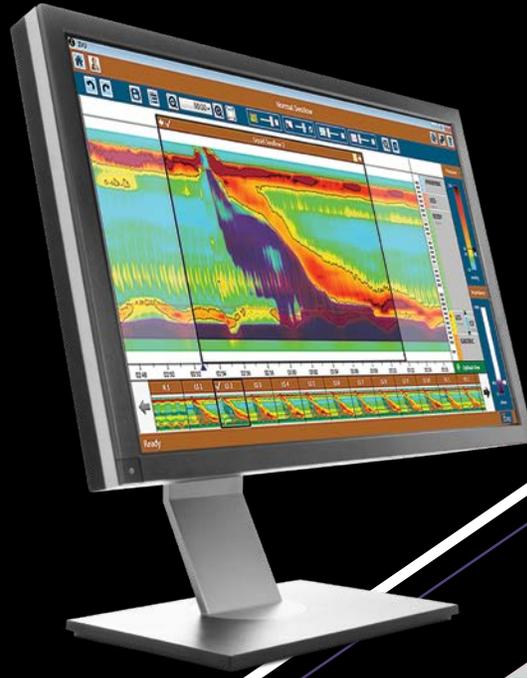


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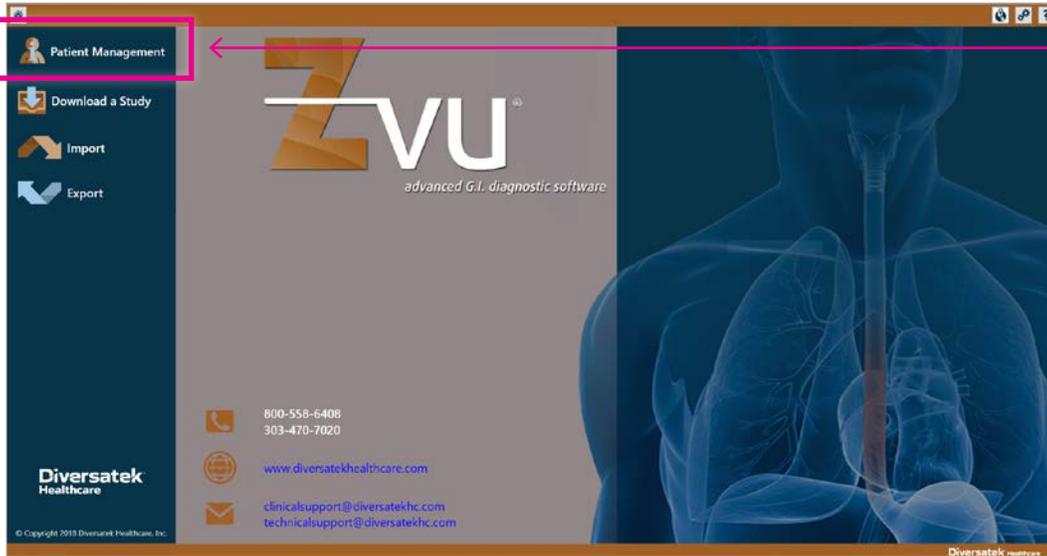
- Select a Patient
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- Impedance Waveform Analysis
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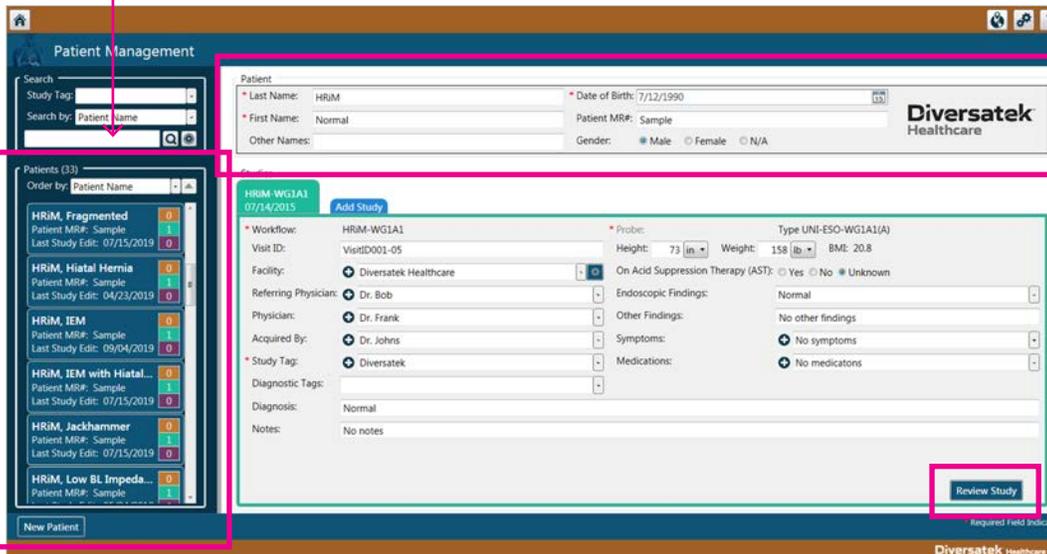
# Select a Patient



Double click on the Zvu icon to open the Zvu® application.



Click on **Patient Management** on the left side of the screen.



Select the desired patient in the patient list.

In the **Patient Section**, verify and correct the information if needed.

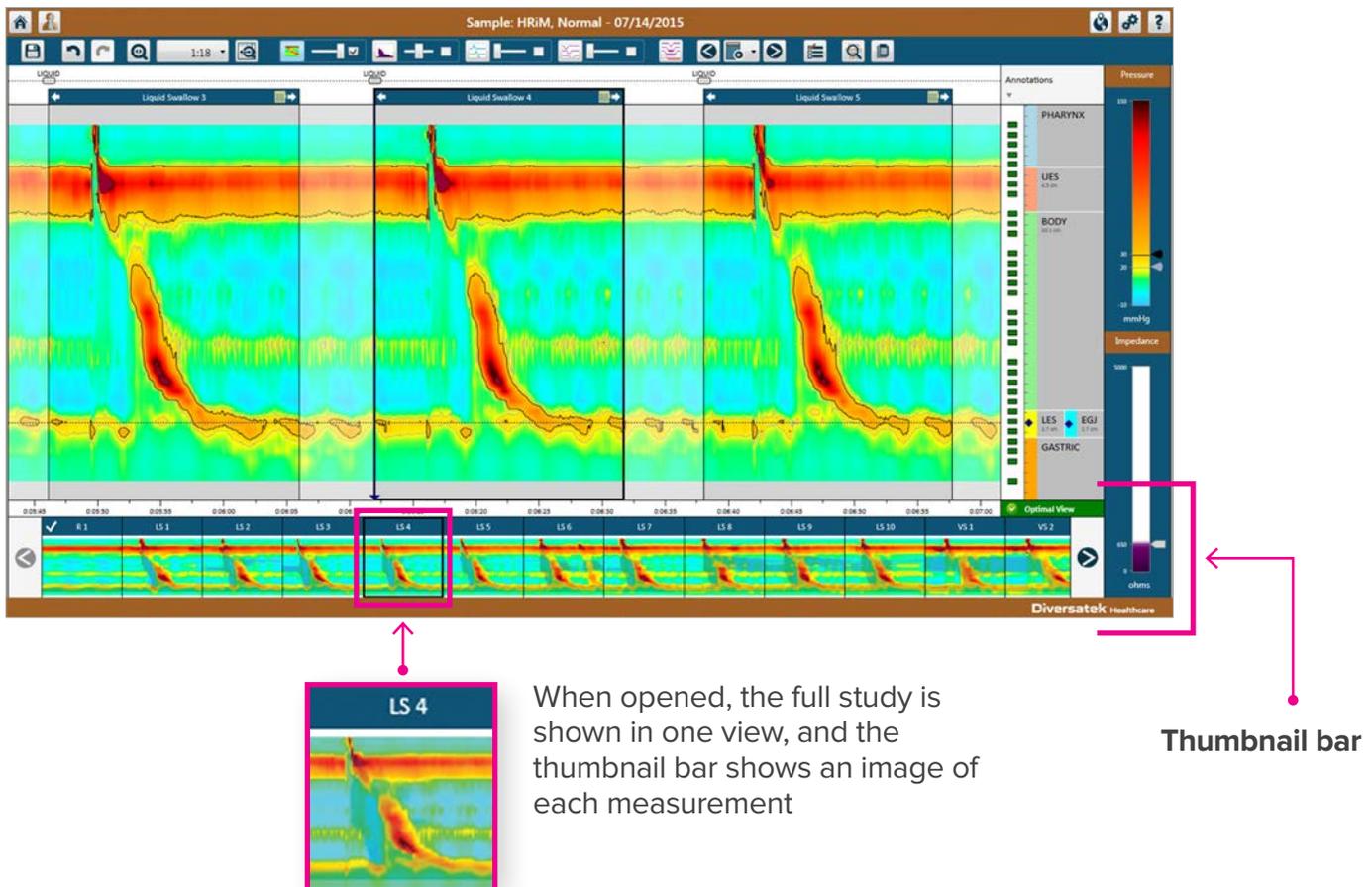


Click **Review Study** in the lower right hand corner.

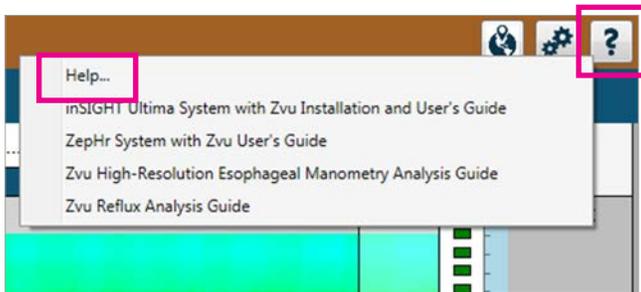
## Select a Patient

### Important Order of Operations

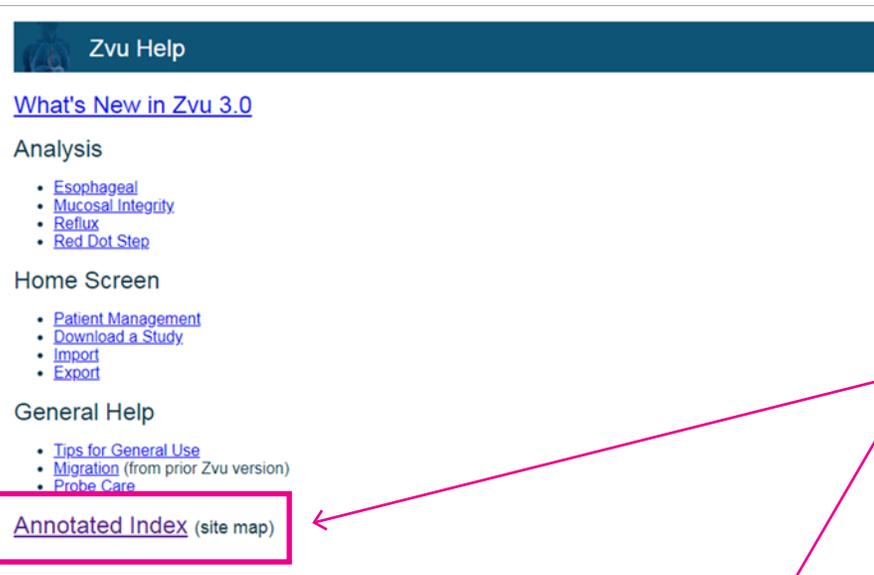
1. View and if necessary, adjust the temperature compensation.
2. In the Resting Measurement, set the probe bar for the UES, LES and EGJ borders and the diamonds at the high pressure zones.
3. If the Resting Measurement is at the end of the study, set the probe bar for the first Liquid Swallow measurement also.
4. Resize/add/delete measurements and annotations as needed.
5. If any Red Dot notifications appear, resolve per the instructions given.
6. Open metrics.
7. Adjust the Pharyngeal, Body and Gastric Baselines if needed.
8. Click and drag the PIP line down below the diaphragm. Slowly drag it up to the first point of maximum inversion and release to mark PIP.
9. Starting with Liquid Swallow 1, review each measurement and adjust analysis marks as needed. Move from left to right through the complete study.
10. Complete any desired fields in the Study Summary section of Metrics.
11. Save changes.
12. Generate and review reports.



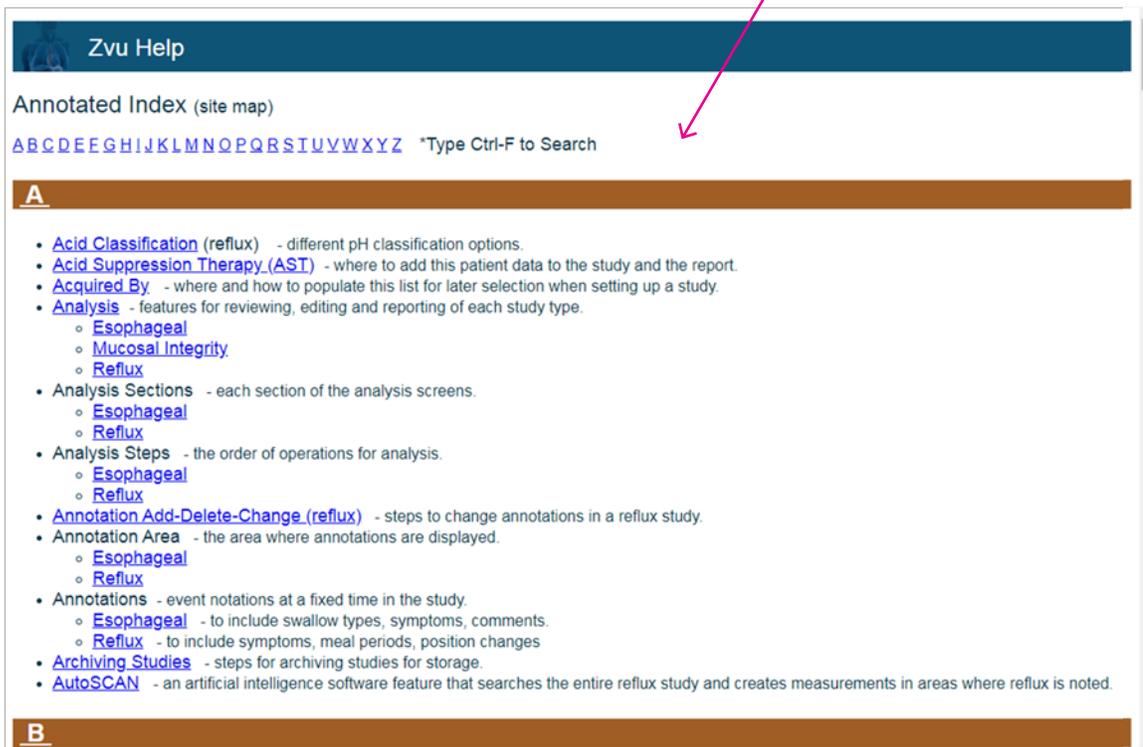
# Select a Patient



For additional details click the ? icon on the right end of the toolbar to access **Help**.



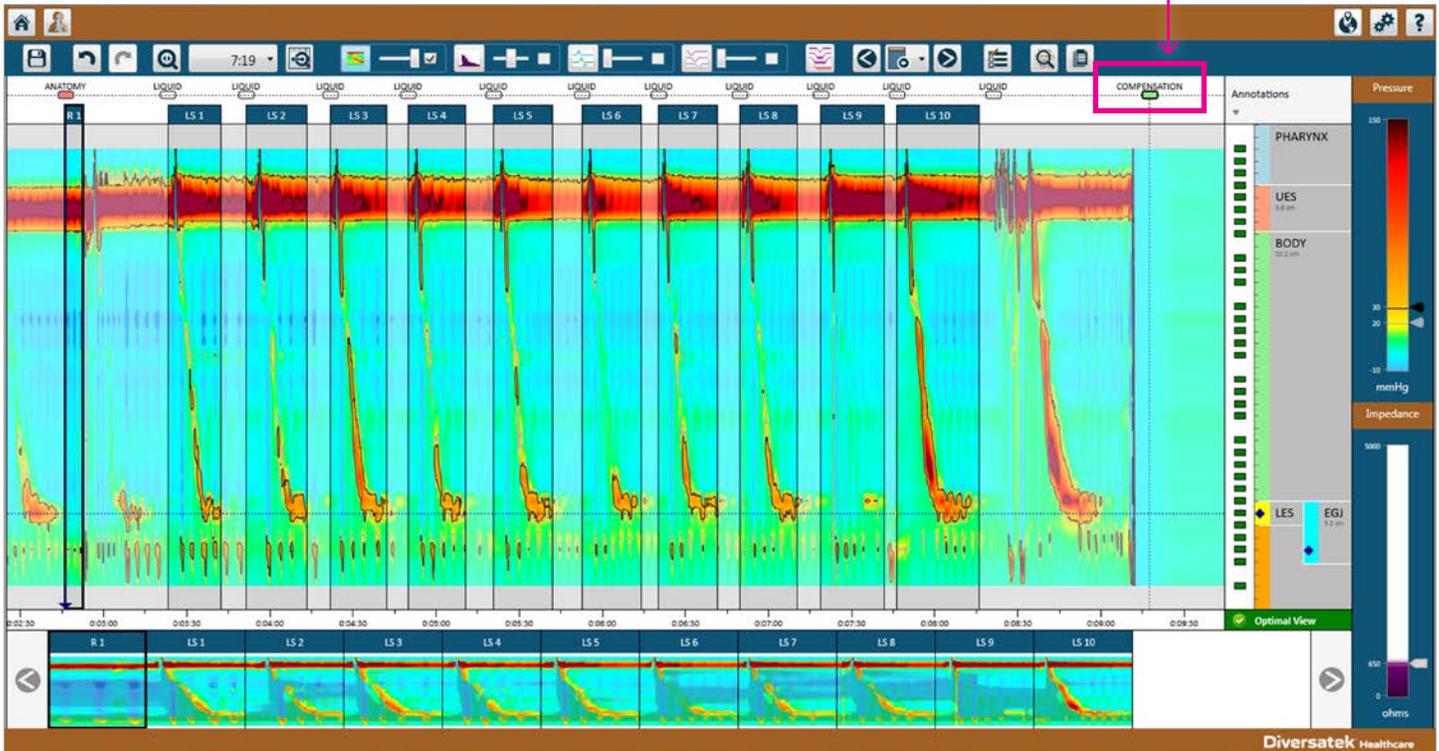
The **Annotated Index** will navigate to the full **Help** list.



## Select a Patient

### Environmental Compensation

The Environmental Compensation corrects the probe calibration to body temperature.

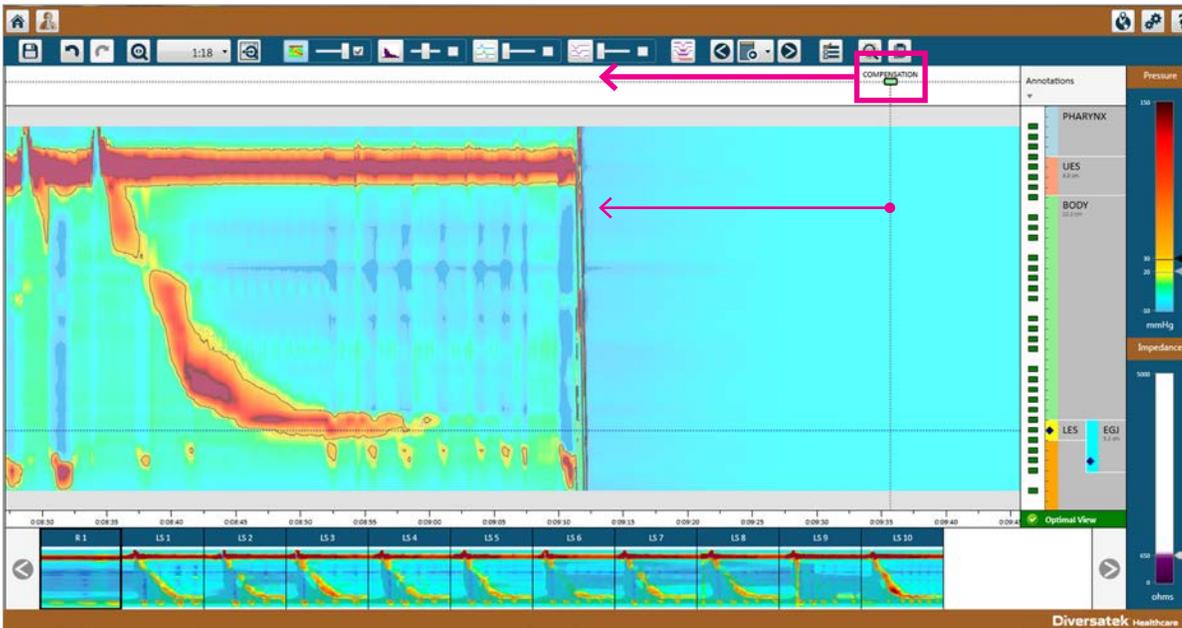


### Review/Adjust the Environmental Compensation.

Double click on the **Compensation** annotation mark (green bubble) located at the end of the study just after the patient was extubated. This will open the time scale to 1 minute at the point of the Environmental Compensation.

## Select a Patient

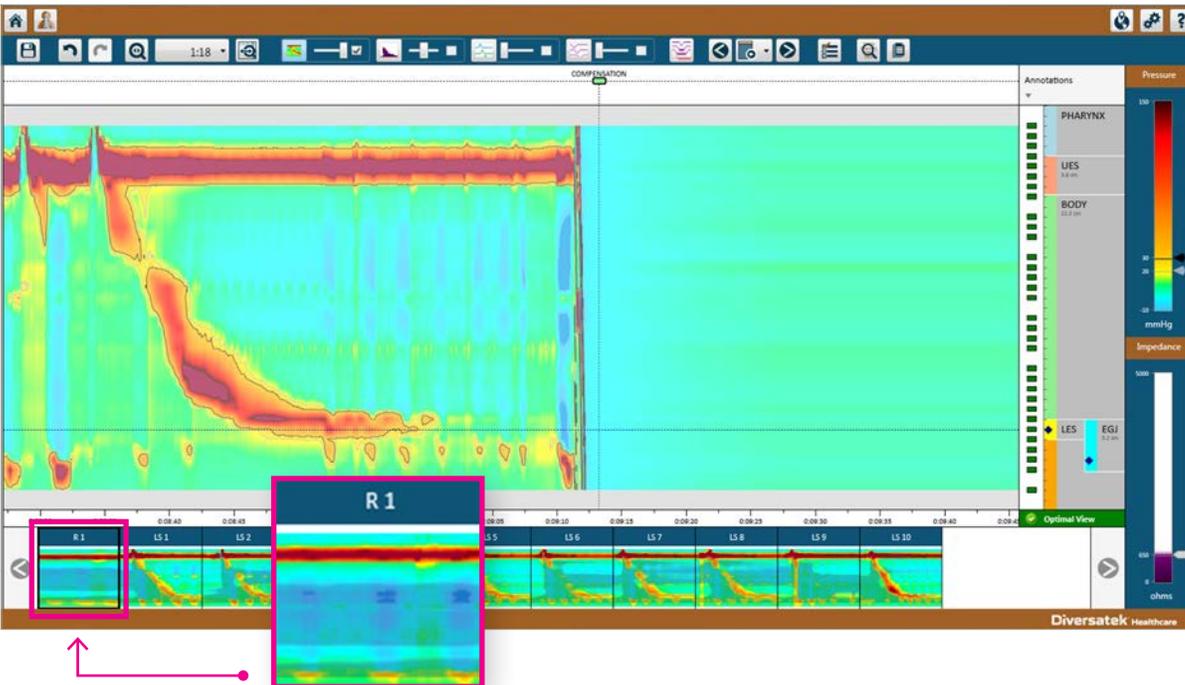
Click and drag the **Compensation** annotation mark to a point just after extubation and away from any area of pressure (indicated by a warm color).



Click the **Save** icon.

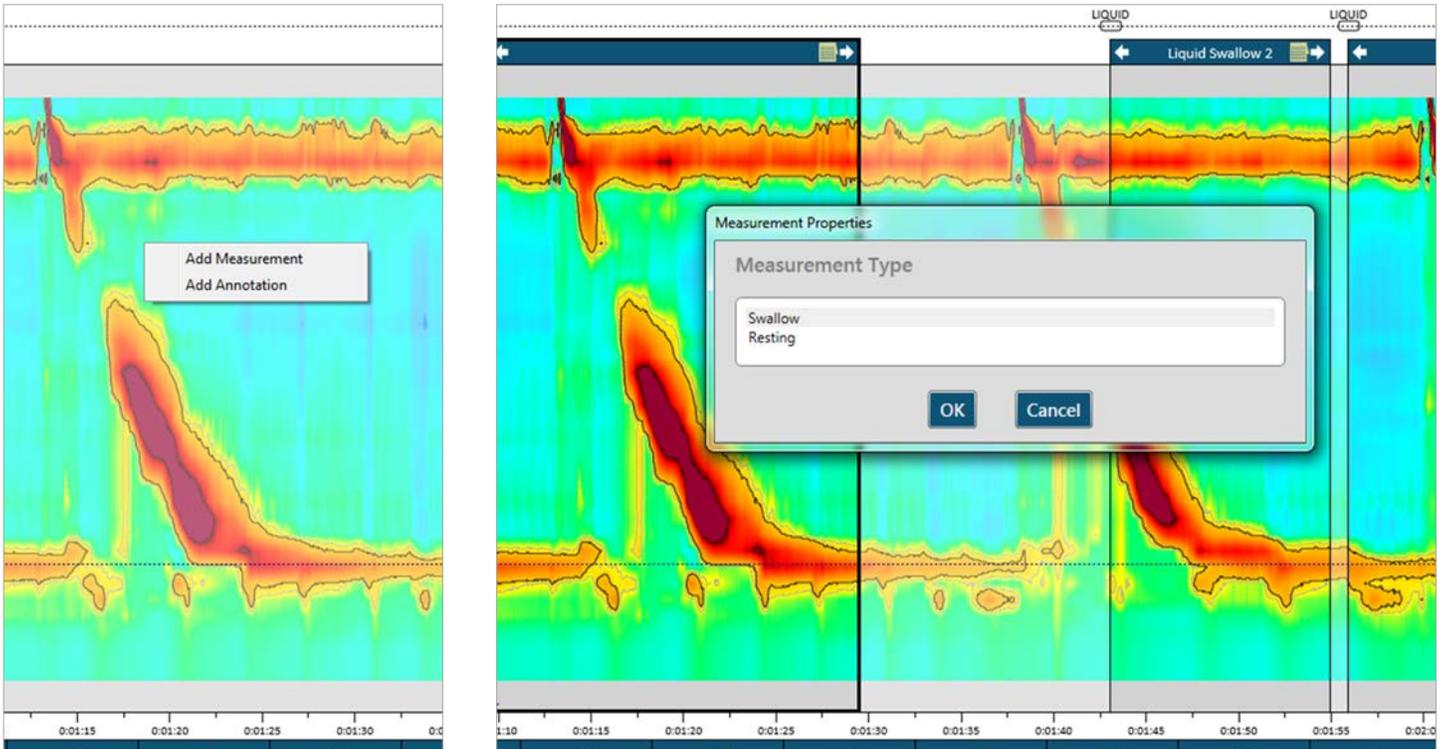
## Resting Measurement

Double click **R1** in the thumbnail bar to open the resting measurement.





## Select a Patient



To add a measurement or an annotation, right click in the data area outside of a measurement and select the desired option.

After selecting **Add Measurement**, click and drag to the right in the data area to define the size of the measurement. Then select the measurement type.

After selecting **Add Annotation**, click in the data area to define the spot for the annotation. Then select the annotation type.

To delete an annotation, right click on the annotation bubble and select **Delete Annotation**.

To delete a measurement, right click on the measurement title bar or anywhere inside the measurement thumbnail and select **Delete Measurement**.

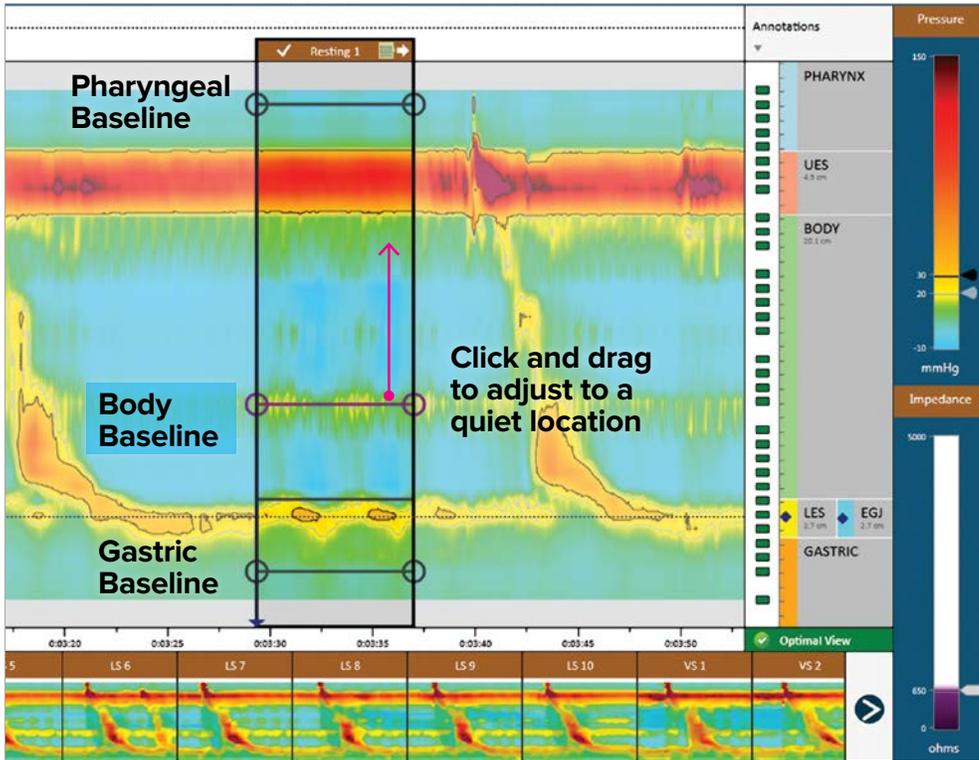
If any Red Dot notifications have appeared, follow the instructions given to resolve any desired red dots prior to opening Metrics.

# Select a Patient

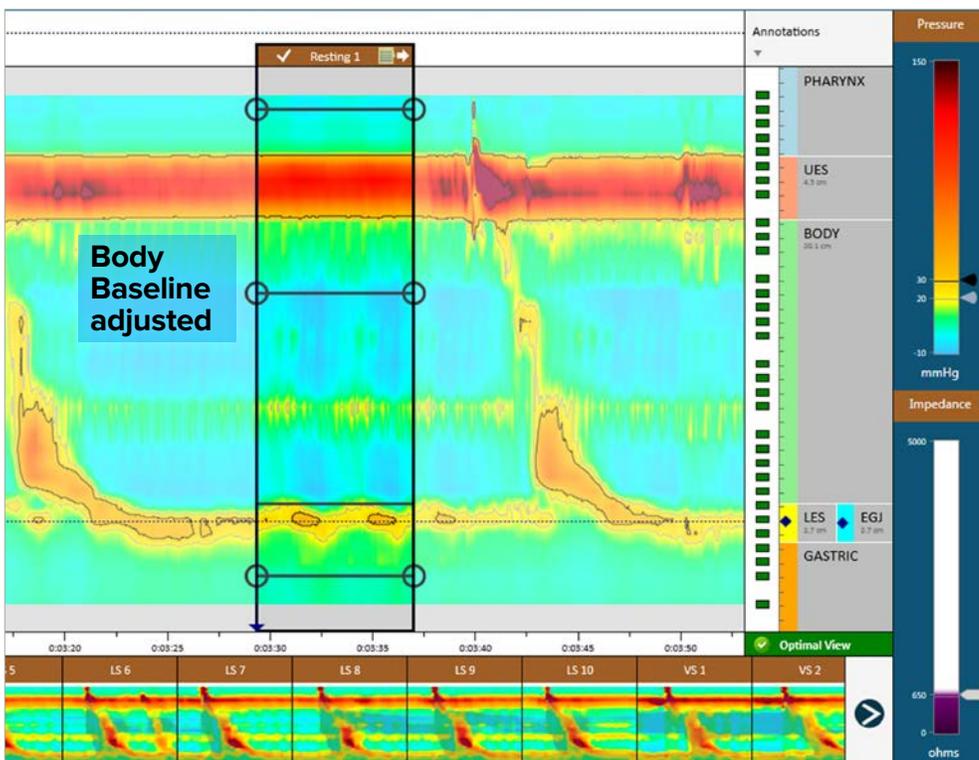
## Turn on Metrics to Show and Adjust Marks



← Open Metrics to run the study analysis.

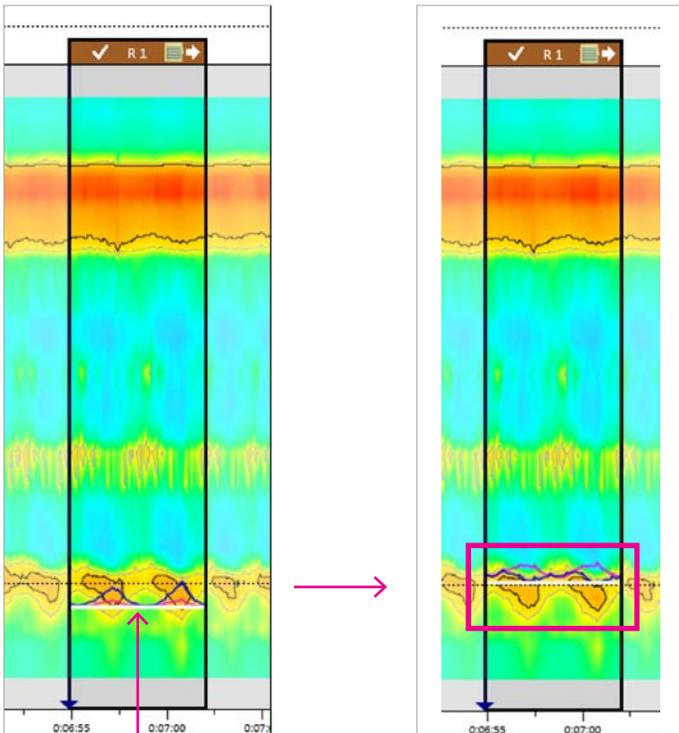


In the **Resting Measurement**, if needed, adjust the **Pharyngeal, Body and Gastric Baselines** to a quiet, cool colored area with the lowest available pressure.



## Select a Patient

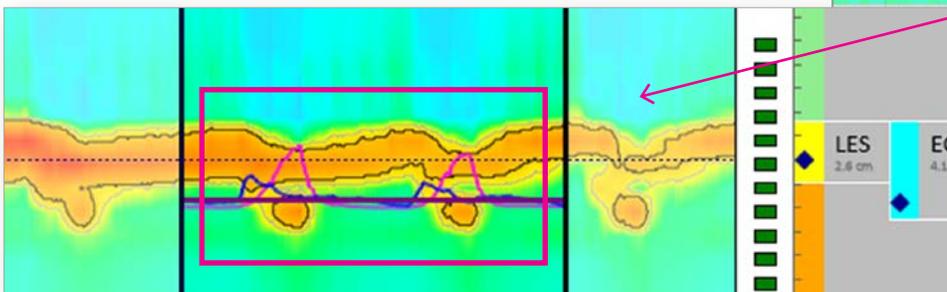
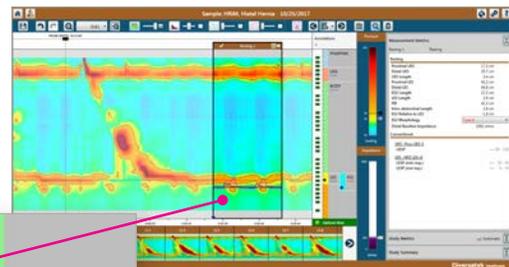
### Adjust Pressure Inversion Point (PIP) Reference Bar



Click and drag the **PIP Reference Bar** into the gastric area then slowly move it proximally.

Observe the respiratory cycles of the red and blue waveforms. Drag to the point where the blue waveform is inverted from the red. Release the mouse to set PIP.

PIP Reference Bar



Click the **Save** icon.

**Note:** If the patient has a hiatal hernia, the PIP should be identified at the point of the diaphragm. Drag up to the first point where the blue waveform is inverted from the red.

# Chicago Analysis

## Swallow Measurements

Measurement Metrics

Liquid Swallow 2 Swallow

Chicago

IRP	11 mmHg	≤ 20
DL	5.0 sec	≥ 4.5
DCI	1560 mmHg-s-cm	450 - 8000
PB	1.1 cm	≤ 5.0
CFV	---	0.0 - 9.0

CV Normal

CP Intact

IBPP ---

Impedance

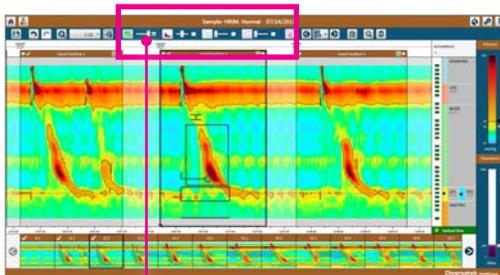
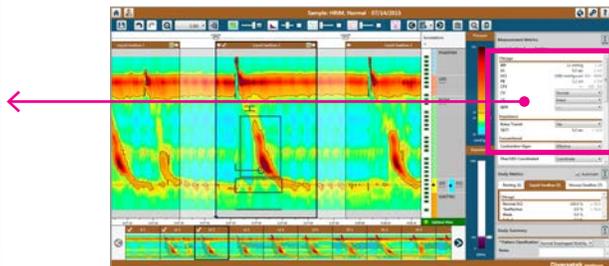
Bolus Transit Yes

TBTT 5.0 sec < 12.0

Conventional

### Chicago Calculations

The **Chicago Classification** values are displayed at the top of the **Measurement Metrics**.

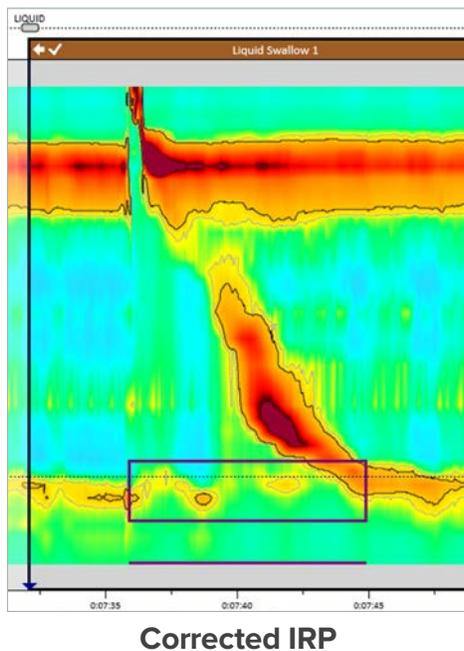
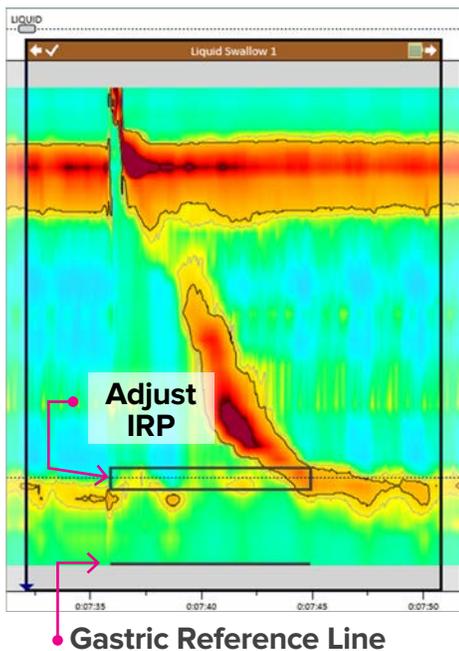


On with checkmark    Off    Off    Off

Turn off the Impedance Contour, Pressure and Impedance Waveforms.  
Turn on Pressure Contour with the checkmark

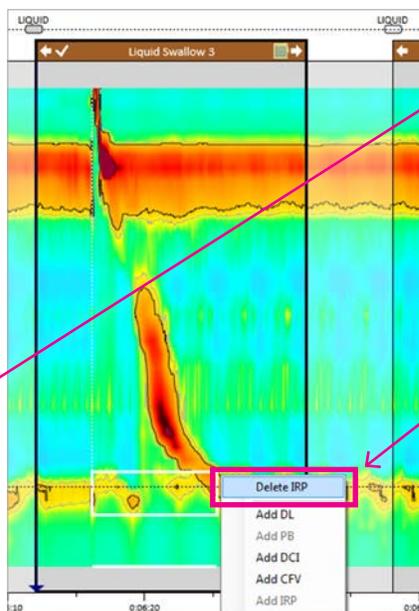
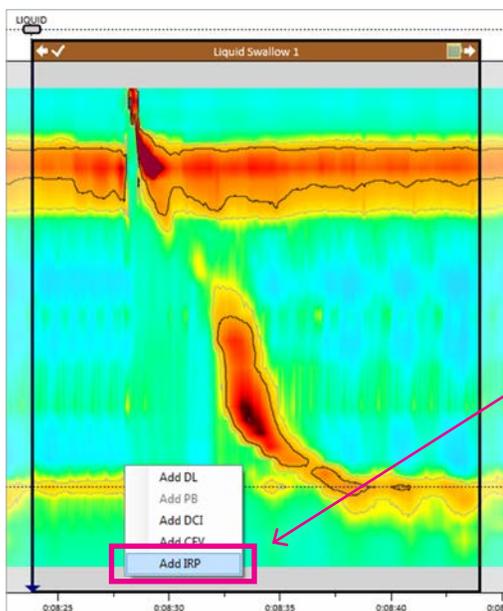
# Chicago Analysis

Select the first **Liquid Swallow** thumbnail. Adjust swallow marks, if needed, as follows:



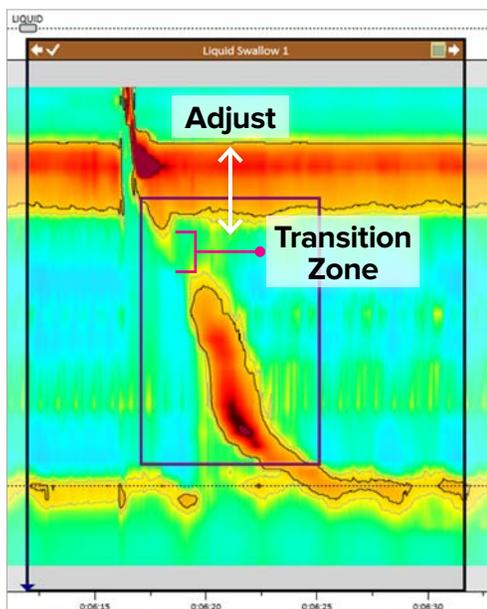
## Integrated Relaxation Pressure (IRP):

- Adjust (click and drag) the right and left borders of the **IRP** box from the onset of swallow to the completion of the peristaltic wave or at least 10 seconds if no contraction is observed.
- Adjust the proximal and distal borders of the IRP box to include the entire length of the EGJ during the swallow if needed.
- Adjust the Gastric Baseline if needed to avoid areas of pressure.



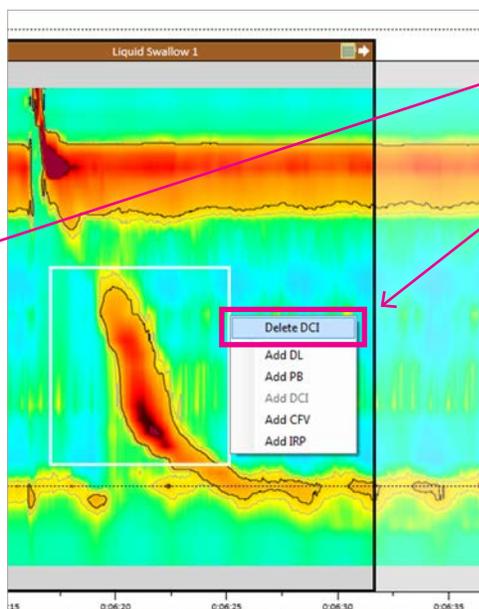
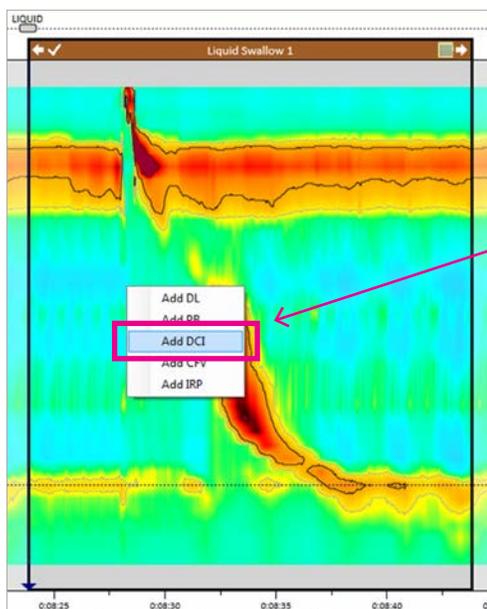
- To add an IRP mark, make sure there is some gastric area below the EGJ on the probe bar. Right click in the swallow measurement. Select **Add IRP**. Adjust the IRP box and Gastric Baseline if needed as instructed above.
- To delete an IRP mark and the corresponding Gastric Baseline, right click on the mark and select **Delete IRP**.

# Chicago Analysis



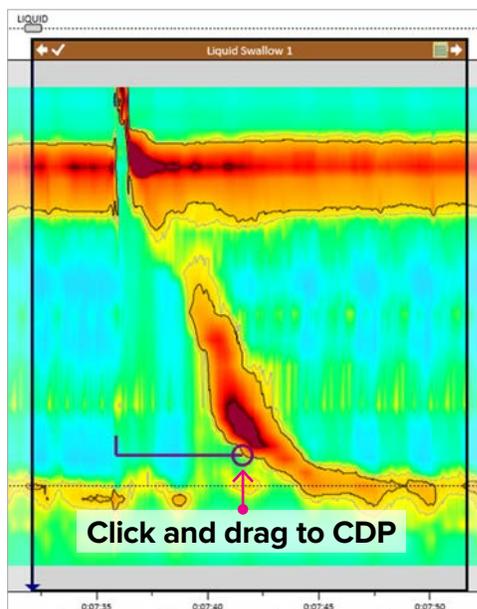
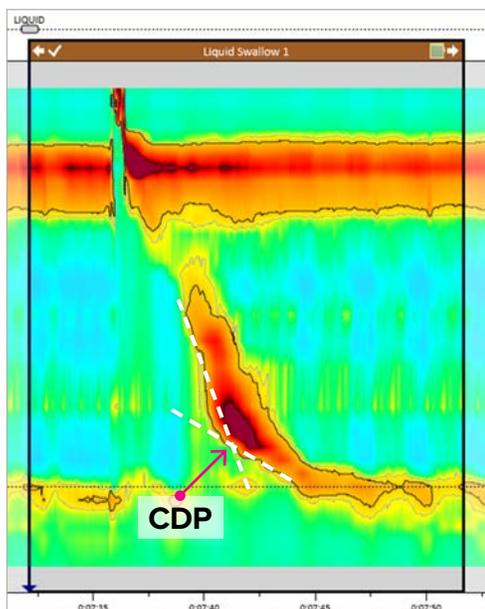
## Distal Contractile Integral (DCI):

- Adjust (click and drag) the borders of the **DCI** box to encompass the peristaltic wave from the distal border of the transition zone to the proximal border of the LES.



- To add a DCI mark, right click in the measurement and select **Add DCI**.
- To delete a DCI mark, select and right click on the mark and select **Delete DCI**.

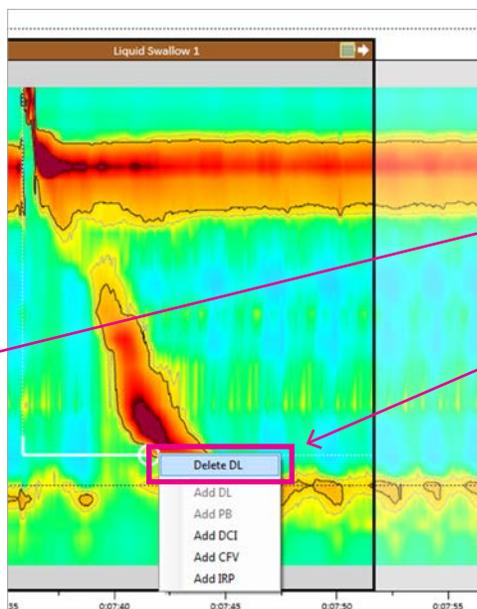
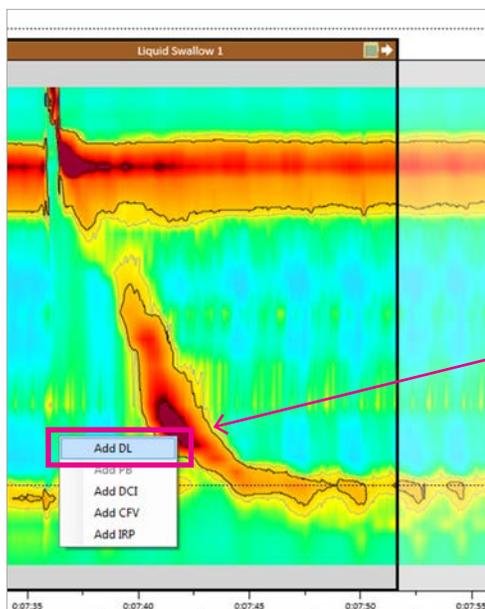
# Chicago Analysis



## Distal Latency (DL):

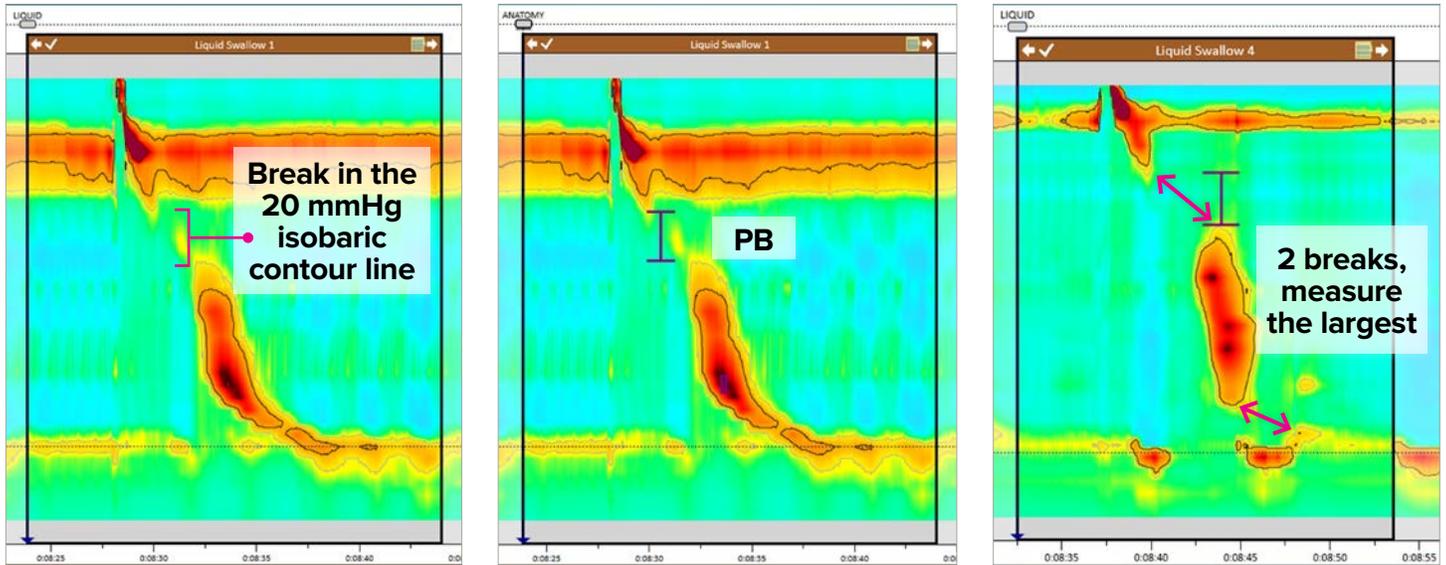
- Adjust (click and drag) the DL from the initiation of swallow (UES start of relaxation) to the **Contractile Deceleration Point (CDP)** of the peristaltic wave using the 30 mmHg isobaric line (black).

The CDP is identified as the point at which the front of the peristaltic wave slows to allow for esophageal emptying and where the tubular esophagus ends.



- To add a DL mark, right click in the measurement and select **Add DL**.
- To delete a DL mark, select and right click on the DL mark and select **Delete DL**.

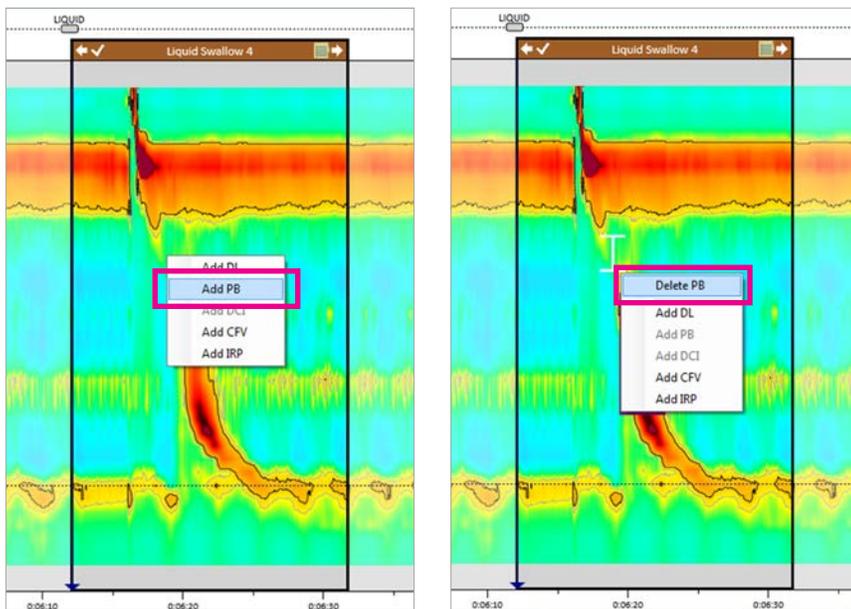
# Chicago Analysis



## Peristaltic Break (PB):

A peristaltic break is defined as any point in the peristaltic wave where there is a break in the 20 mmHg isobaric contour line (gray). If more than 1 break is observed, adjust the PB to measure the largest break.

- Adjust (click and drag) the top and bottom edges of the PB from the proximal edge of the break in peristalsis to the point where peristalsis recovers using the 20 mmHg isobaric contour line (gray).



When the DCI is < 450 mmHg.s.cm, the PB is not needed (swallow is already ineffective).

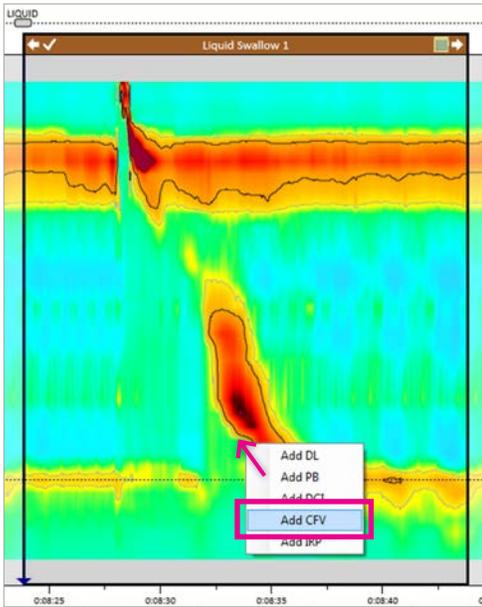
**Note: See appendix for normal values for Chicago v3.0.**

- To add a PB, right click inside the measurement area and select **Add PB**.
- To delete, select the PB, right click and select **Delete PB**.

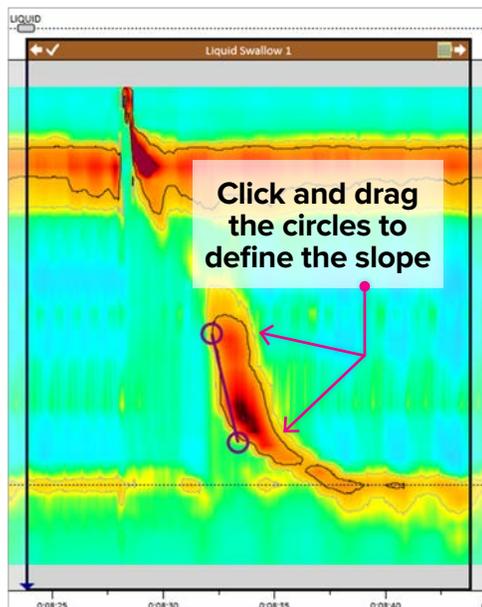
# Chicago Analysis

## Contractile Front Velocity (CFV):

Contractile Front Velocity is not a part of the standard parameters for the Chicago Classifications but can be added, if desired. CFV calculates the speed of the peristaltic wave in the distal esophagus by measuring the 30 mmHg isobaric contour front slope in the distal esophagus from the distal transition zone to the deceleration point.



- To add a CFV, right click inside the measurement area and select **Add CFV**. Adjust the slope to follow the front edge of the peristaltic wave from the distal edge of the transition zone to the deceleration point.



- To delete, select the CFV, right click and select **Delete CFV**.

Evaluate and edit all Liquid Swallows.

**Note: Viscous Pressure analysis is optional.**

Click the **Save** icon.

# Impedance Waveform Analysis

## Bolus Transit Analysis

Measurement Metrics

Liquid Swallow 2 Swallow

Chicago

IRP	13 mmHg	≤ 20
DL	5.0 sec	≥ 4.5
DCI	1227 mmHg-s-cm	450 - 8000
PB	3.3 cm	≤ 5.0
CFV	---	0.0 - 9.0

CV Normal

CP Intact

IBPP ---

**Impedance**

Bolus Transit Yes

TBTT 4.6 sec < 12.0

Conventional

The **Impedance** values are displayed below the Chicago values in the **Measurement Metrics**.

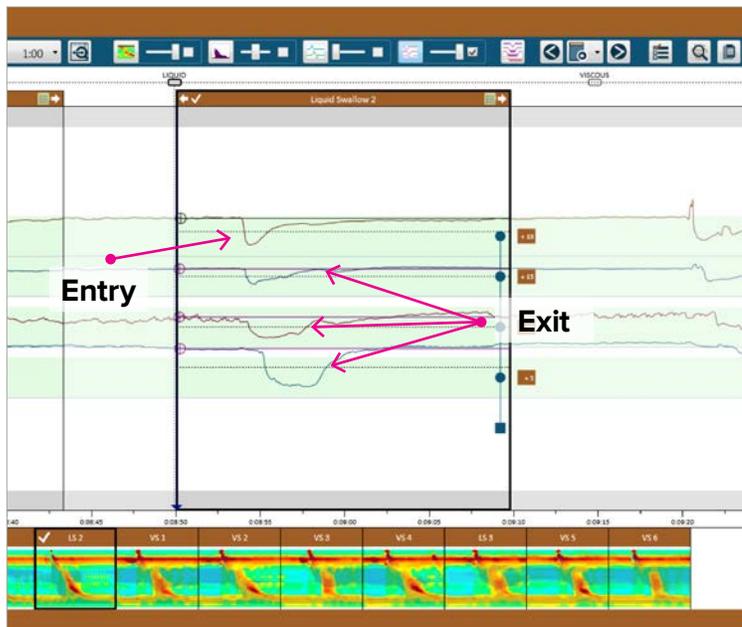


Off Off Off On with checkmark

Turn off Pressure Contour, Impedance Contour and Pressure Waveforms. Turn on Impedance Waveform. Select the first Liquid Swallow thumbnail.

# Impedance Waveform Analysis

## Impedance Rules for Complete Bolus Transit



1. The bolus must have an entry in the proximal impedance waveform—the wave drops below the 50% threshold (dotted line) of the baseline.
2. The bolus must exit in the distal 3 waves—each wave rises above the 50% threshold (dotted line) of the baseline and remains above for at least 5 seconds.
3. The bolus must accomplish Complete Bolus Transit within 15 seconds of the original entry.

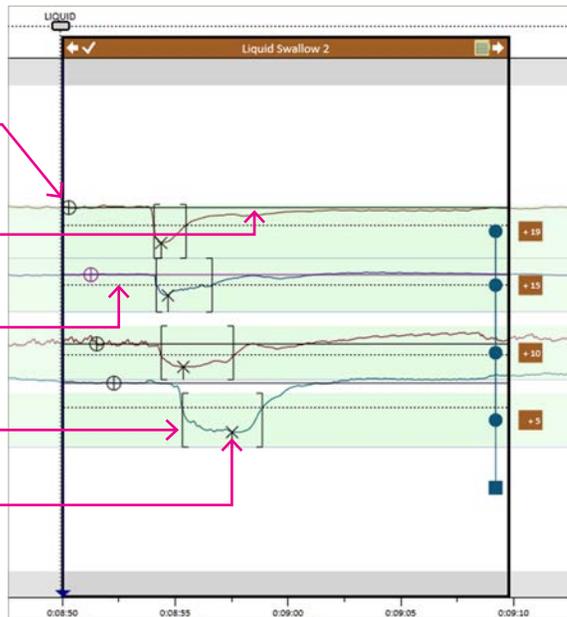
Circle for adjusting the baseline

Baseline impedance

Dashed line: 50% threshold

Brackets [ ]: bolus entry and exit

X: Bolus nadir

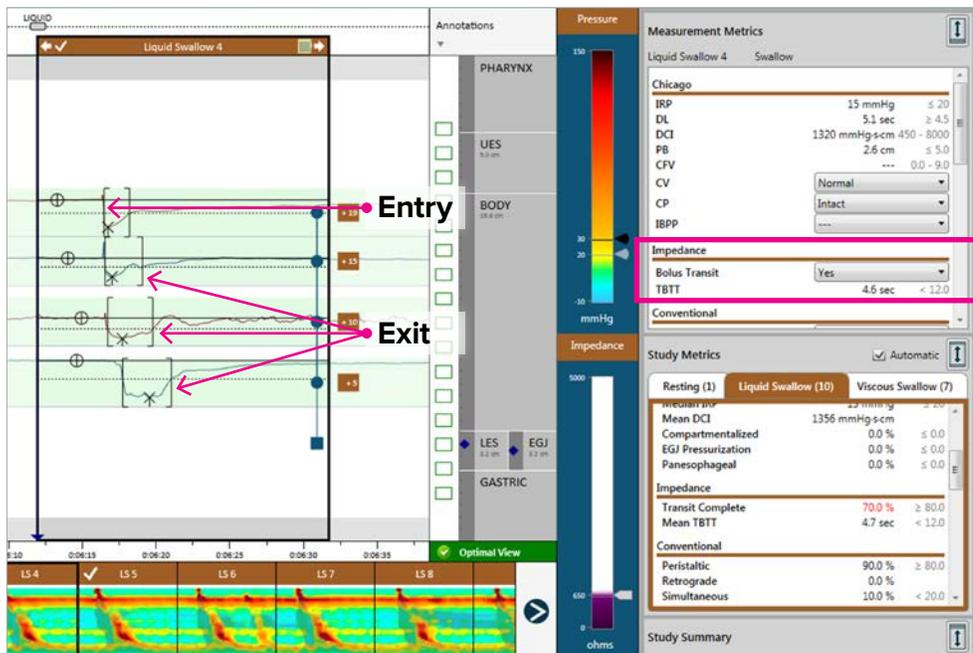


In the Measurement Metrics window, view Impedance transit values.

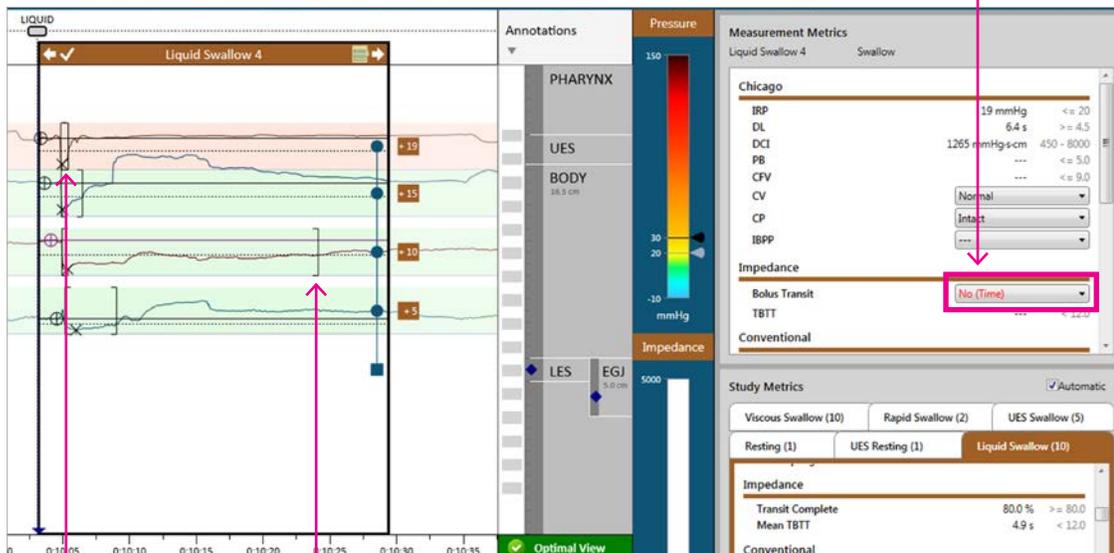
Evaluate each Impedance measurement (Liquid and Viscous).

# Impedance Waveform Analysis

When Transit reads **Yes**, no editing is required.



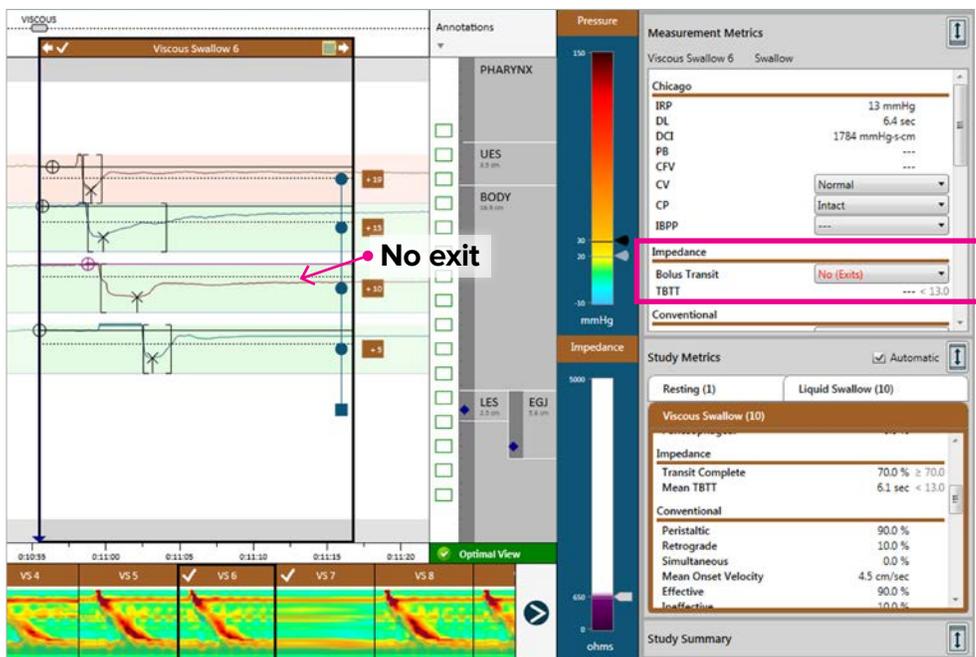
When Transit reads "No Time", no editing is required.



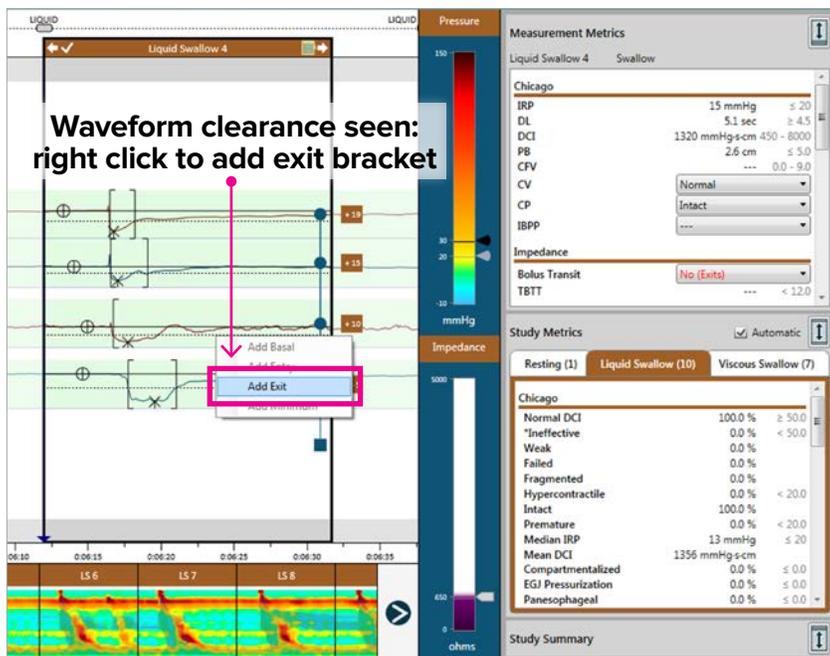
No (Time) = Exit in one of the 3 distal lanes occurred more than 15 seconds after the Entry in the first lane

# Impedance Waveform Analysis

When Transit reads **No (Exits)**, verification is required. If an exit is not observed and a distal waveform fails to clear 50% threshold, no editing is required.



If a waveform rises above the 50% threshold and stays above for at least 5 seconds, an exit should be added.



Point cursor to the observed exit point. Right click and select **Add Exit**.

Click and drag the added Exit mark to adjust its location, if needed.

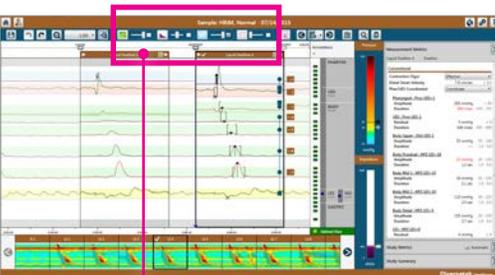
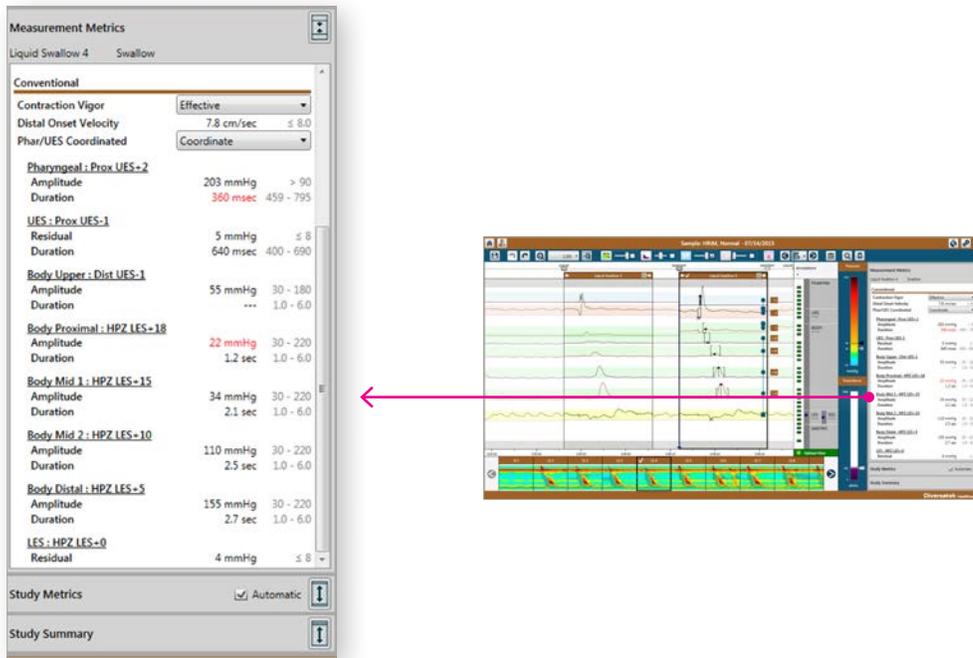
**Evaluate and edit all Liquid and Viscous Swallows.**

Click the **Save** icon.

# Conventional Analysis

## Waveform Analysis

To view Conventional pressure values, scroll to the bottom of the **Measurement Metrics** window if needed.

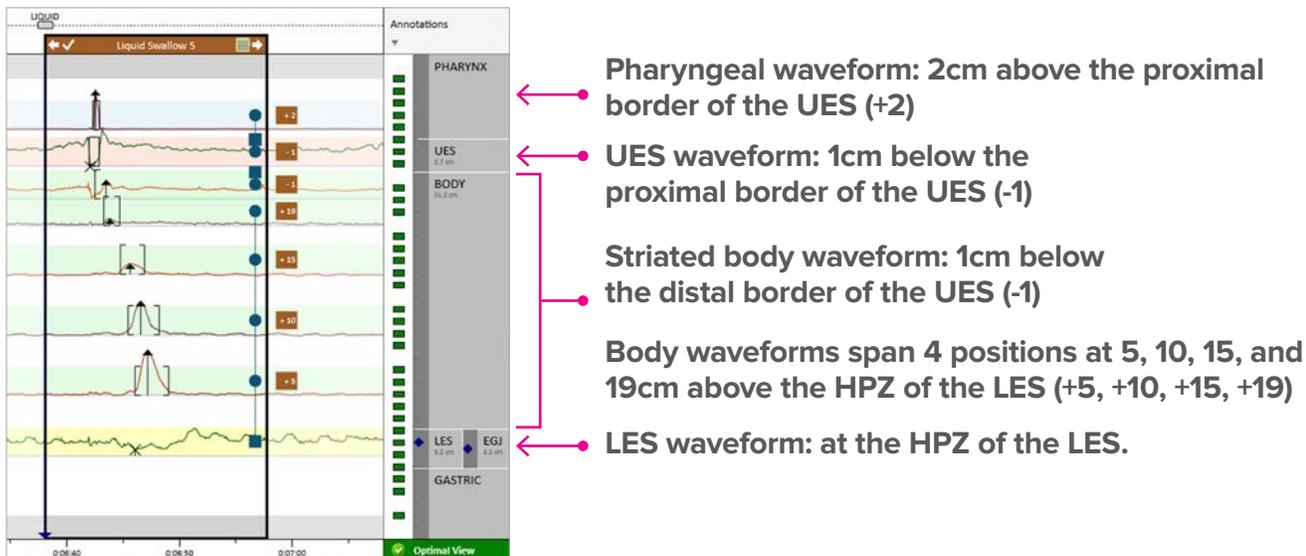


Turn off Pressure and Impedance Contours and Impedance Waveforms.  
Turn on Pressure Waveforms.

## Conventional Analysis

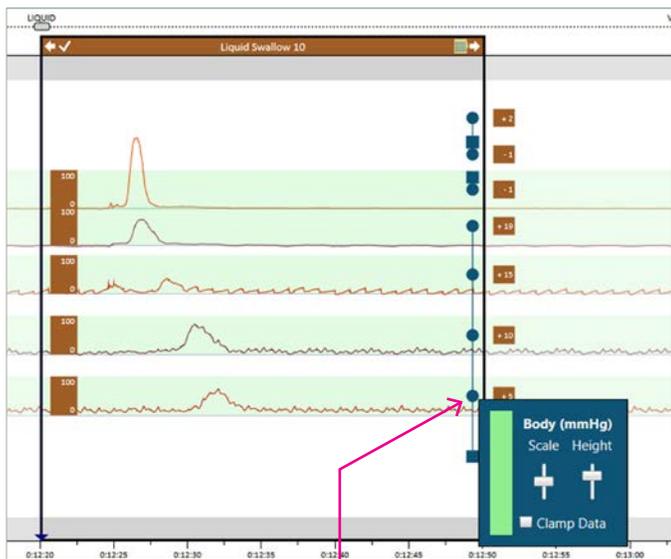
Select the first **Liquid Swallow** thumbnail.

The waveform lanes activated are based on the probe bar adjustment of the HPZ of the LES made in the Resting or first Liquid Swallow Measurement (the first measurement in the study).



Right click on a blue dot on the right of the measurement. Select **Height** to double the height of the lanes in a region. Click on **Scale** until the desired scale is displayed.

Check the **Clamp Data** box to prevent the waveforms from overlapping, if desired.



Right click on the waveform dot to adjust Scale or Height

## Conventional Analysis

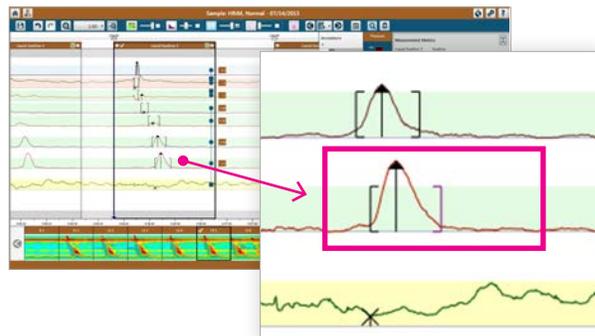
1. Adjust the brackets for all Body Waveforms as follows:

Click and drag the left bracket [ to the upslope of the contraction, and the right bracket ] to the downslope of the contraction.

*Magnify the screen as needed by left clicking on the area of interest and scrolling the mouse wheel forward. Pull the wheel back to zoom out again.*



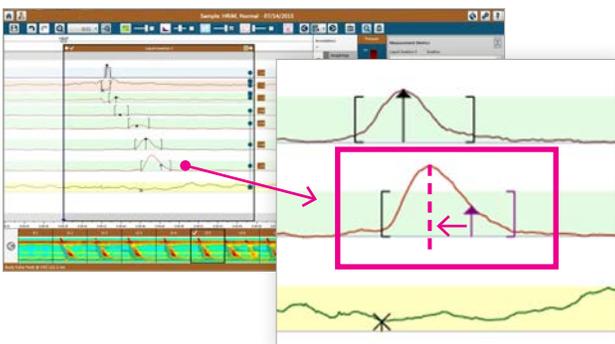
Body Bracket [ to adjust



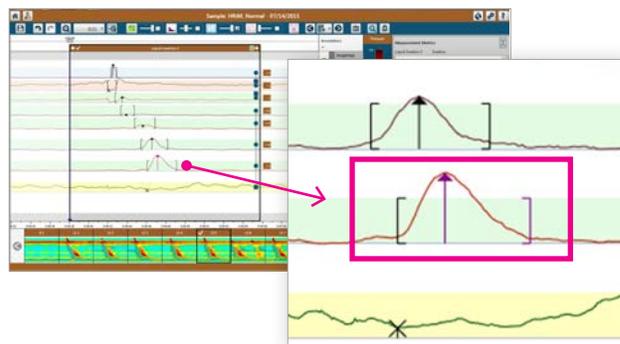
Body Bracket corrected

2. Verify the placement of each amplitude marker (↑) in each Esophageal Body waveform as needed at the peak of contraction. Click and drag to desired location.

**Note: The amplitude marker will follow the waveform as it is moved.**



Body Peak ↑ to adjust



Body Peak corrected

3. Adjust (click and drag) the LES Nadir marker X on the LES waveform to the lowest point of relaxation, smoothing the curve and avoiding respiratory artifact.



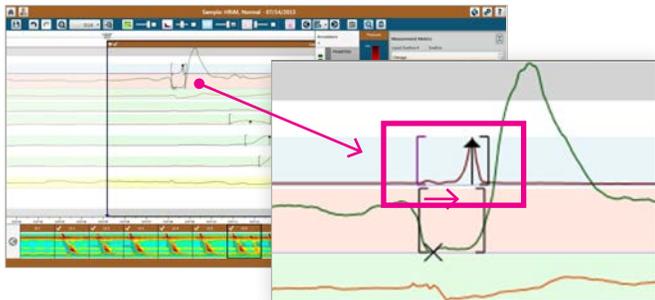
LES Nadir X to adjust



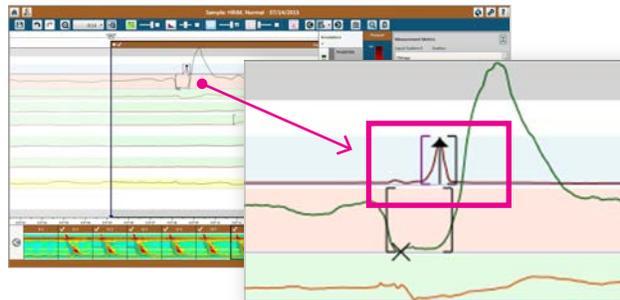
LES Nadir corrected

## Conventional Analysis

4. Adjust the brackets [ ] and peak ↑ of the Pharyngeal Waveform in the same way as the other Body marks were adjusted.



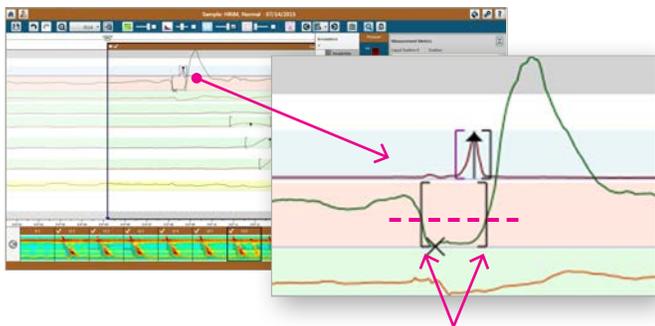
Pharyngeal Bracket [ to adjust



Pharyngeal Bracket corrected

5. Correct the UES relaxation markers:

- a. The left bracket [ is positioned at the downslope of the relaxation and the right bracket ] is positioned at the upslope of the sphincter closure.



UES Relaxation Brackets

- a. Adjust (click and drag) the UES Relaxation Nadir marker X in the UES waveform to the lowest point of relaxation, smoothing the curve and avoiding the initial drop in pressure.



UES Nadir X to adjust



UES Nadir corrected

**Note: Review Measurement Metrics for each swallow.**

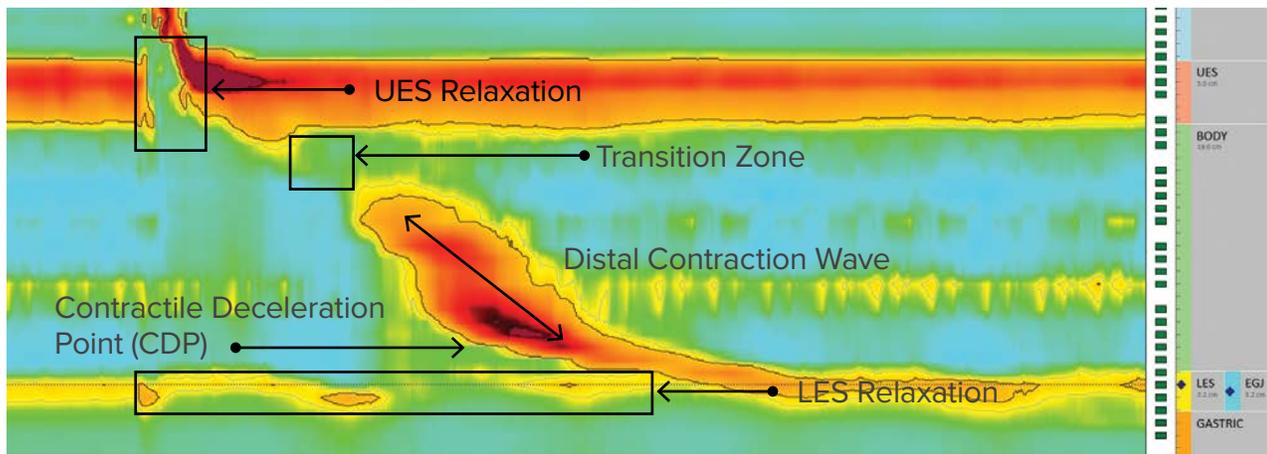
Evaluate and edit all **Liquid Swallows**.

**Note: Viscous Pressure analysis is optional.**

Click the **Save** icon.

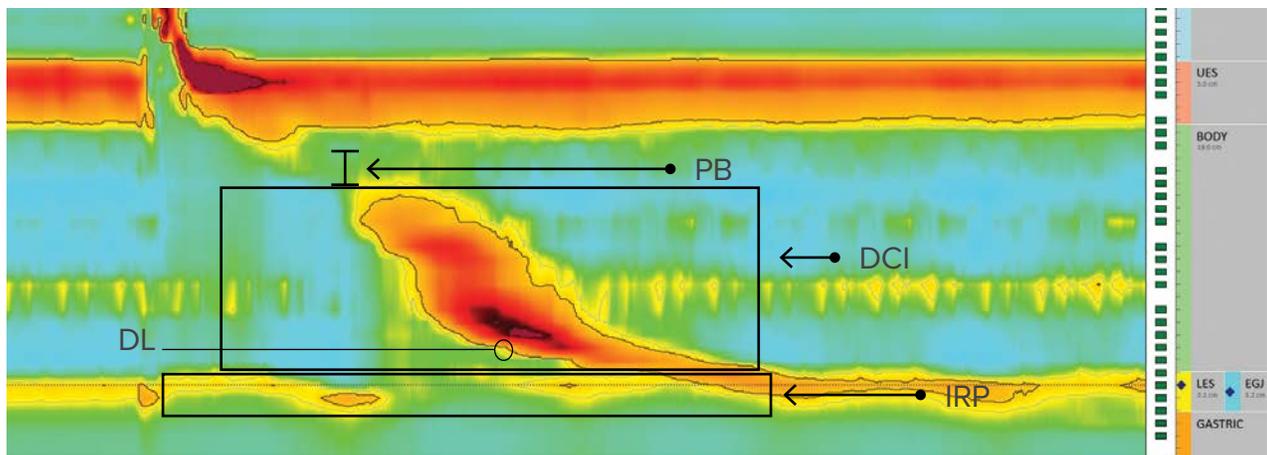
This Swallow Atlas was created to categorize esophageal motility disorders using the Chicago Classifications v3.0 when the clinician is using the Zvu<sup>®</sup> Functional GI Software along with the HRiM High Resolution Manometry Probe supplied by Diversatek Healthcare.

## Anatomic Features used in Chicago Classifications v3.0



## Applying the Metrics

Metric	Abbreviation	Unit of Measure	Definition
Integrated Relaxation Pressure	IRP	mmHg	Mean of the 4s of the maximum deglutitive relaxation in the 10-s window beginning at UES relaxation
Distal Contractile Integral	DCI	mmHg.s.cm	Amplitude x duration x length of the distal esophageal contraction exceeding 20 mmHg from the transition zone to the proximal margin of the LES
Distal Latency	DL	sec	Interval between UES relaxation and the contractile deceleration point (CDP)
Peristaltic Break	PB	cm	Break in the 20 mmHg isocontour



Chicago Classification v3.0 Normal Values—Diversatek Healthcare

Metric	Abbreviation	Normal Threshold	Comments
Integrated Relaxation Pressure	IRP	≤ 20 mmHg > 20 mmHg	Normal Abnormal
Distal Contractile Integral	DCI	450 ≥ < 8000 mmHg.s.cm 100–450 mmHg.s.cm < 100 mmHg.s.cm ≥ 8000 mmHg.s.cm	Normal Weak (Ineffective) Failed (Ineffective) Hypercontractile
Distal Latency	DL	≥ 4.5 sec < 4.5 sec	Normal Premature
Peristaltic Break	PB	≤ 5 cm > 5 cm	Normal Fragmented (ineffective only if DCI > 450)
Contractile Frontal Velocity (If chosen to be utilized)	CFV	< 9 cm/s > 9 cm/s	Normal Rapid

Types of Ineffective Swallows

<b>Weak</b>	DCI 100–450 mmHg.s.cm
<b>Failed</b>	DCI < 100 mmHg.s.cm
<b>Fragmented</b>	DCI ≥ 450 mmHg.s.cm and PB > 5 cm

Each type is added for total ineffective swallows in a study.

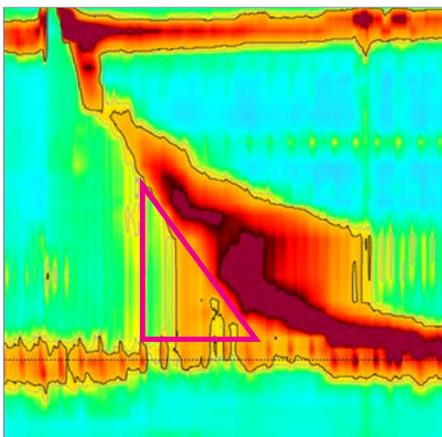
Intrabolus Pressure Pattern (IBPP)

Intrabolus pressure patterns are defined as abnormal pressurization corresponding to regions of esophageal or EGJ pressure > 30 mmHg (within the 30 mmHg isobaric contour).

The red outlines below show where the pressurization patterns exist. These are not marks that are displayed in the actual study.

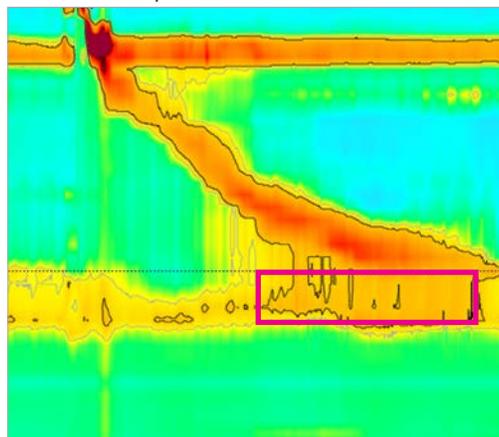
Compartmentalized Pressurization

Extending from the contractile front to the EGJ



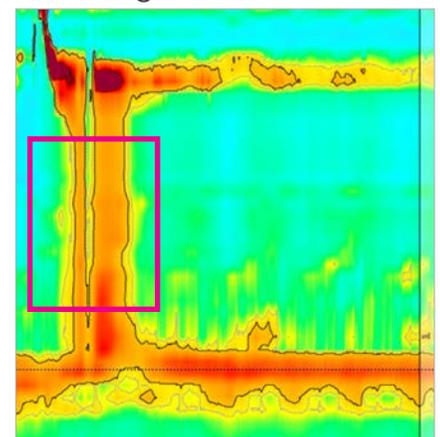
EGJ Pressurization

Restricted to the zone between the LES and CD in conjunction with LES-CD separation.

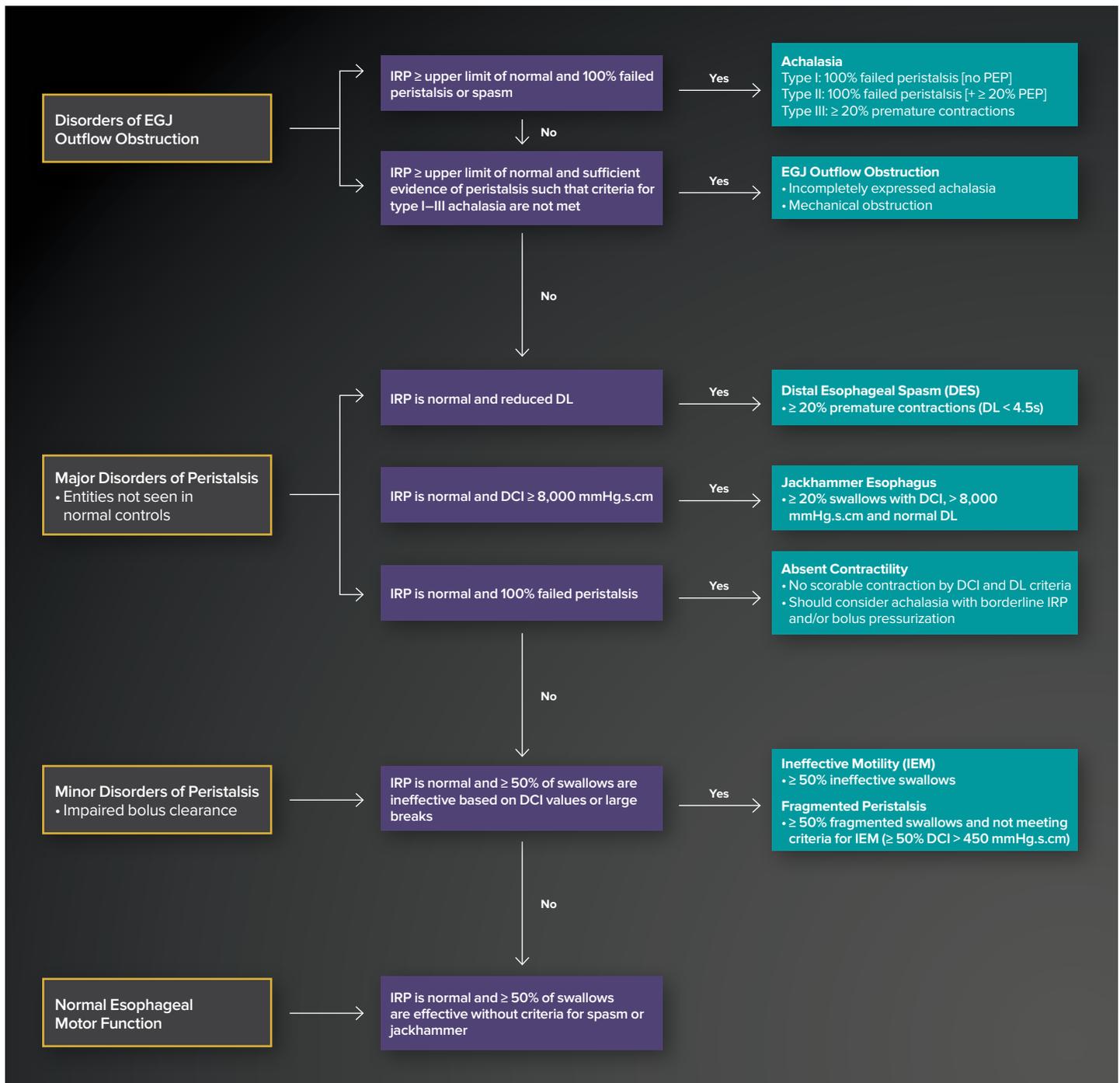


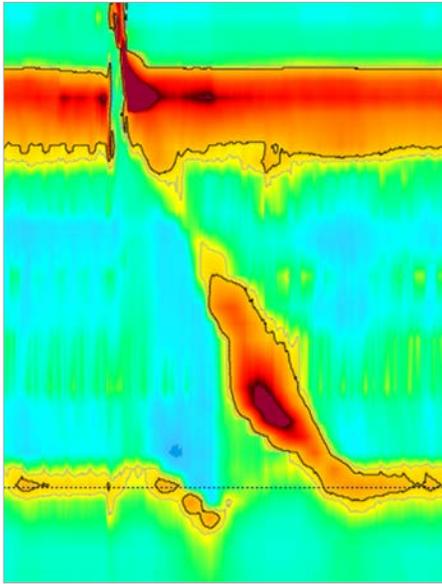
Panesophageal Pressurization (PEP)

Uniform pressurization extending from UES to the EGJ



### Chicago Classification v3.0 Hierarchical Analysis

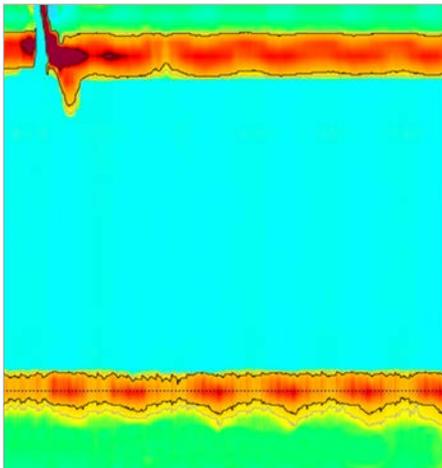




### Normal Esophageal Motility

Median IRP is normal and  $\geq 50\%$  of swallows are effective without criteria for spasm or jackhammer.

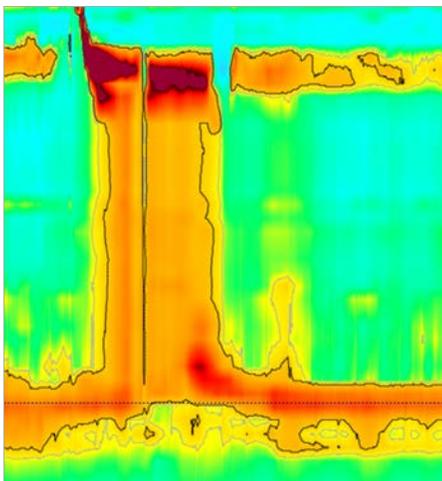
Metric	Normal Threshold	Comments
Median IRP	$\leq 20$ mmHg	Normal
DCI	450–8000 mmHg.s.cm	Normal, $\geq 50\%$ effective swallows (does not meet criteria for spasm or jackhammer)
DL	$\geq 4.5$ sec	$< 20\%$ Premature
PB	$\leq 5$ cm	$\geq 50\%$



### Achalasia Type I

Median IRP is  $\geq$  upper limit of normal and 100% failed peristalsis or spasm.

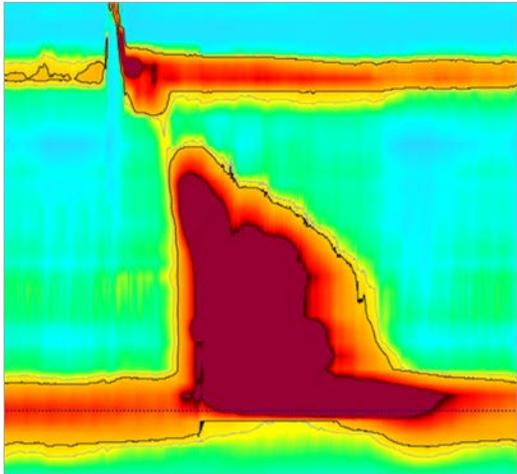
Metric	Normal Threshold	Comments
Median IRP	$> 20$ mmHg	Abnormal
DCI	N/A	No visually evident peristalsis or spasm



### Achalasia Type II

Median IRP is  $\geq$  upper limit of normal and 100% failed peristalsis or spasm. Panesophageal pressure (PEP) present in  $\geq 20\%$  of swallows.

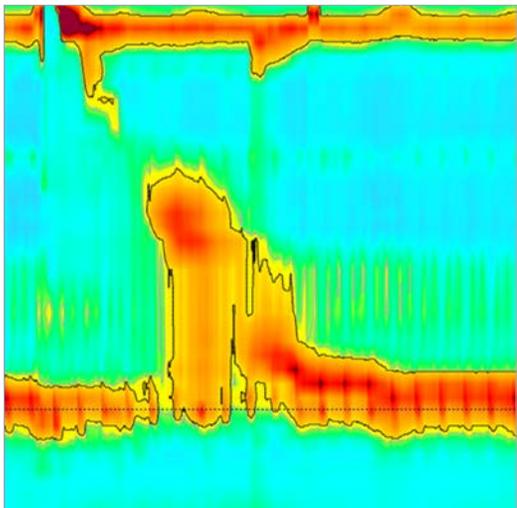
Metric	Normal Threshold	Comments
Median IRP	$> 20$ mmHg	Abnormal
DCI	N/A	100% aperistalsis
IBPP	N/A	PEP $\geq 20\%$ of swallows



### Achalasia Type III

Median IRP is  $\geq$  upper limit of normal and 100% failed peristalsis or spasm.  $\geq$  20% of swallows display premature contractions.

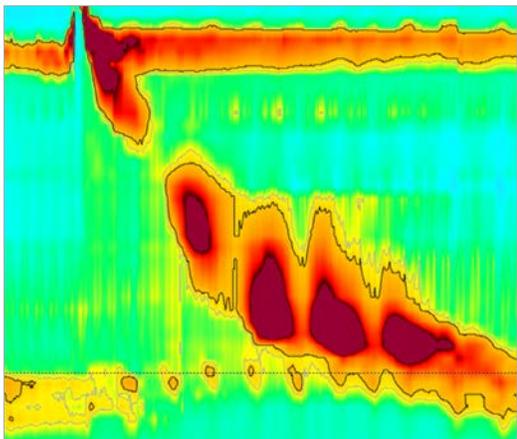
Metric	Normal Threshold	Comments
Median IRP	> 20 mmHg	Abnormal
DCI	450–8000 mmHg.s.cm $\geq$ 8,000 mmHg.s.cm	Normal Hypercontractile
DL	< 4.5 sec	Premature, $\geq$ 20% of swallows



### EGJ Outflow Obstruction

Median IRP is  $\geq$  upper limit of normal and sufficient evidence of peristalsis such that criteria for Type I-III achalasia are not met. Incompletely expressed achalasia. Mechanical obstruction.

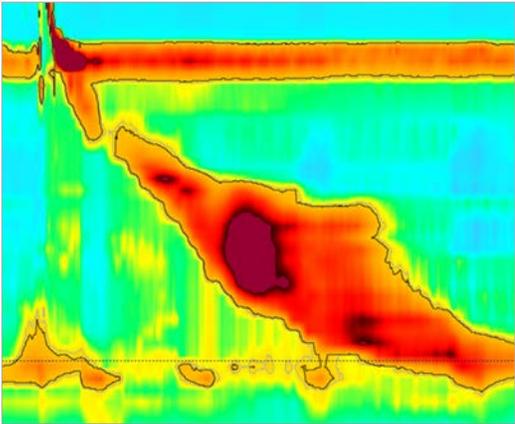
Metric	Normal Threshold	Comments
Median IRP	$\geq$ 20 mmHg	Abnormal
DCI	450–8000 mmHg.s.cm	Normal
DL	$\geq$ 4.5 sec	Normal
IBPP	N/A	Compartmentalized pressurization may be observed



### Jackhammer Esophagus

Median IRP is normal and  $\geq$  20% DCI  $\geq$  8,000 mmHg.s.cm with repetitive contraction patterns. Normal DL.

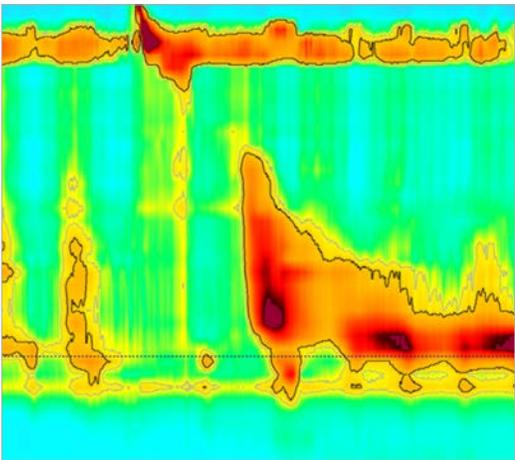
Metric	Normal Threshold	Comments
Median IRP	$\leq$ 20 mmHg	Normal
DCI	$\geq$ 8,000 mmHg.s.cm	Hypercontractility in $\geq$ 20% of swallows, repetitive contraction pattern may be seen
DL	$\geq$ 4.5 sec	Normal



### Nutcracker Esophagus

Not described in Chicago Classifications.

Metric	Normal Threshold	Comments
Median IRP	≤ 20 mmHg	Normal
DCI	≥ 8,000 mmHg.s.cm	Hypercontractility in ≥ 20% of swallows, sustained pattern may be observed. May involve or be localized to the LES
DL	≥ 4.5 sec	Normal

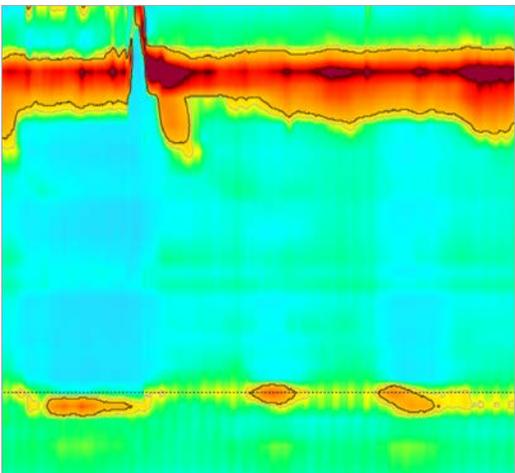


### Distal Esophageal Spasm (DES)

Median IRP is normal and reduced DL.

≥ 20% of swallows display premature contractions.

Metric	Normal Threshold	Comments
Median IRP	≤ 20 mmHg	Normal
DCI	450–8,000 mmHg.s.cm	Normal
DL	< 4.5 sec	Premature, ≥ 20% of swallows



### Absent Contractility

Median IRP is normal and 100% failed peristalsis.

No scorable contraction by DCI and DL criteria. Achalasia with borderline IRP and/or bolus pressurization should be considered.

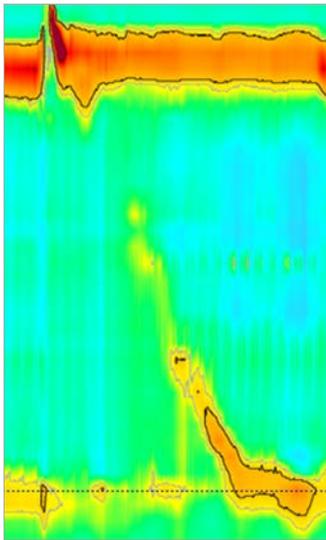
Metric	Normal Threshold	Comments
Median IRP	≤ 20 mmHg	Normal
DCI	< 100 mmHg.s.cm	Failed (Ineffective)

## Types of Ineffective Swallows using Chicago Classifications Metrics

### Ineffective Swallow Metrics

<b>Weak</b>	DCI 100–450 mmHg.s.cm
<b>Failed</b>	DCI < 100 mmHg.s.cm
<b>Fragmented</b>	DCI > 450 mmHg.s.cm and PB > 5 cm

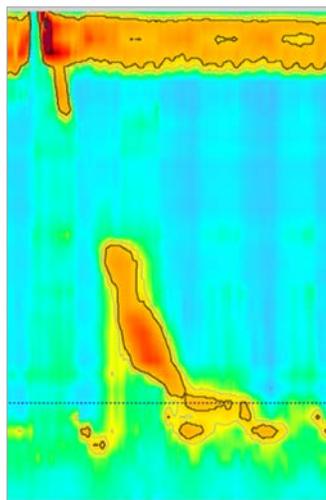
Each type is added for total ineffective swallows in a study.



### Ineffective Esophageal Motility (IEM)

Median IRP is normal and  $\geq 50\%$  of swallows are ineffective based on DCI values or large breaks.

Metric	Normal Threshold	Comments
Median IRP	$\leq 20$ mmHg	Normal
	< 450 mmHg.s.cm	$\geq 50\%$ of swallows, Weak (Ineffective) or Failed (Ineffective)
DCI	450–8,000 mmHg.s.cm	Fragmented swallows (PB $\geq 5$ cm) can also count toward ineffective swallow count



### Fragmented Peristalsis

IRP is normal and  $\geq 50\%$  of swallows are fragmented and not meeting criteria for IEM

Metric	Normal Threshold	Comments
Median IRP	$\leq 20$ mmHg	Normal
DCI	> 450 mmHg.s.cm	Normal, $\geq 50\%$ of swallows
PB	> 5 cm	$\geq 50\%$ of swallows

## Hiatal Hernia

Hiatal Hernia can be described using EGJ Morphology when measuring the separation of the LES from the crural diaphragm (CD). EGJ Outflow Obstruction may be seen related to the mechanical obstruction derived from the hernia.

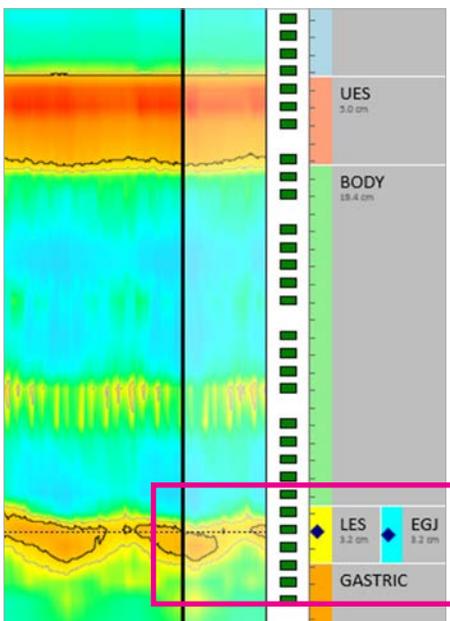
The CDP may be located at the proximal LES or within the boundaries of the LES.

Metrics to define Hiatal Hernia:

- EGJ Morphology Type II or III.
- IRP median may be normal or may be elevated.
- EGJ pressurization may be present (IBPP).

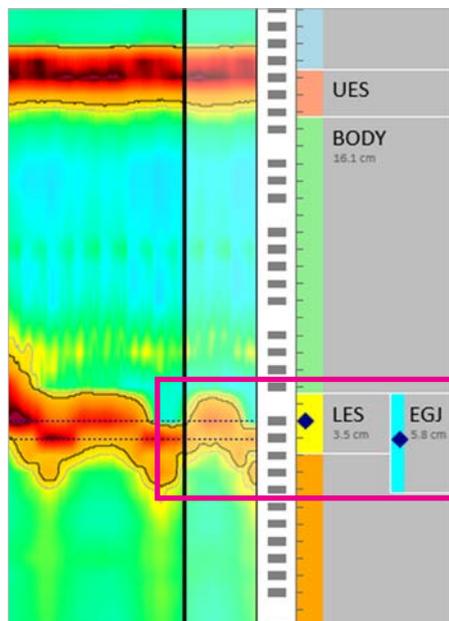
### EGJ Morphology Type I

< 1cm separation between the HPZ of the LES and HPZ of the CD



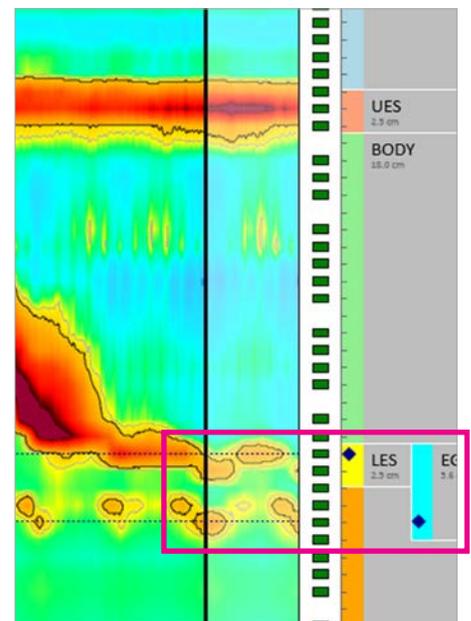
### EGJ Morphology Type II

1–2cm separation between the HPZ of the LES and HPZ of the CD



### EGJ Morphology Type III

> 2cm separation between the HPZ of the LES and HPZ of the CD



## References

1. Kahrilas P, Bredenoord A, Fox M, Gyawali C, Roman S, Smout A, Pandolfino J & International High Resolution Manometry Working Group, 'The Chicago Classification of esophageal motility disorders, v3.0'. *Neurogastroenterol Motil.* 2015;27 pg. 160–174.
2. do Carmo G.C., Jafari J, Sifrim D, de Oliveira R.B., 'Normal esophageal pressure topography metrics for data derived from the Sandhill-Unisensor high-resolution manometry assembly in supine and sitting positions.' *Neurogastroenterol Motil.* 2015 Feb;27(2):285-92. doi: 10.1111/nmo.12501. Epub 2015 Jan 3.

# Appendix



Zvu Home Screen



Language Selection for Study Review



Help Resources



Patient Management



Download a Study (Reflux Study Data)



Import a Study from External Storage Media



Export a Study to External Storage Media



Save



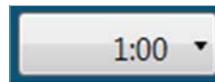
Undo Last Action



Redo Last Action



Zoom In



Time Scale



Zoom Out to The Full Study



**Pressure contour icon/slider bar and analysis mark checkbox:** The slider bar adjusts the pressure contour opacity. The icon (image) turns on/off the display at the set opacity level. A check in the checkbox shows the pressure contour analysis marks (Resting baselines and Chicago analysis marks).



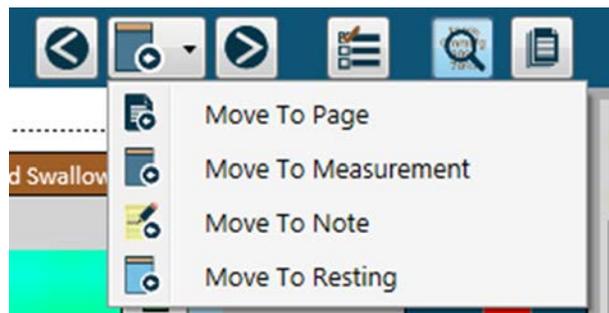
**Impedance contour icon/slider:** The slide bar adjusts the contour opacity level. The icon (image) turns on/off the contour display at the set opacity level.



**Pressure waveform icon/slider bar and analysis mark checkbox:** The icon (image) or the slider bar turns on/off the pressure waveform display. A check in the checkbox shows the pressure waveform analysis marks.



**Impedance waveform icon/slider and analysis mark checkbox:** The icon (image) or the slider bar turns on/off the impedance waveform display. A check in the checkbox shows the impedance waveform analysis marks.



Move To icons navigate the study by a selected feature.



Options



Metrics



Reports



# Innovations in Clinical Education

## Diversatek University Online

Our online training platform contains free content on esophageal and anorectal manometric studies, as well as impedance/pH reflux monitoring studies. Included are tutorials providing step-by-step guidance to develop skills in data acquisition, study review and report generation. Simply go to **DiversatekHealthcare.com** to request log-in information.

## Denver Training Center

Our Technical Research & Training Center offers a number of product training courses to provide clinical users with the knowledge and skills necessary to effectively acquire and analyze High Resolution Impedance manometry studies, impedance/pH reflux monitoring studies and High Resolution Anorectal manometry studies. Email us at **clinicaleducation@diversatekhc.com** or visit us online to learn more about our Denver course offerings.

## Webinars

Diversatek Healthcare is proud to present a series of live, interactive discussions on topics related to esophageal function testing, impedance/pH reflux monitoring studies and anorectal manometry. Each webinar includes a didactic session followed by an open discussion. All webinars are recorded and posted to the Diversatek U online portal for easy reference. Access **DiversatekHealthcare.com** for upcoming webinar announcements.

## The Diversatek Healthcare Review

The Diversatek Healthcare Review e-newsletter features what's new at Diversatek University along with up-to-date product information. Every issue also includes our Clinical Insights, providing educational tips for Z/pH and HRiM analysis as well as answers to the most frequently asked questions.

# Personalized Clinical Support

## Onsite Training

Diversatek Healthcare Clinical Specialists deliver product support to suit your specific needs—on your schedule. Specialists are onsite at your facility to train and support you on your Diversatek Healthcare manometry or reflux monitoring equipment as you work through patient cases, acquire and analyze patient data, and create patient reports.

## Virtual Coaching

Online and in real-time, Diversatek Healthcare Clinical Specialists work with you via screen sharing to provide study-specific data review and report generation coaching for your more difficult studies. Email us at **clinicalsupport@diversatekhc.com** to schedule a one-on-one session.



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